

Permitco inc.

A Petroleum Permitting Company

July 9, 1985

RECEIVED

JUL 11 1985

DIVISION OF OIL
GAS & MINING

State of Utah
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Re: Wintershall Oil & Gas Corp.
Cow Canyon #35-13
1940' FSL and 1100' FWL
Sec. 35, T37S - R25E
San Juan County, Utah

Gentlemen:

Wintershall Oil & Gas Corp. proposes to drill a well at the above mentioned location.

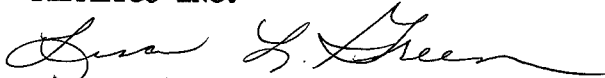
✓We realize that this location is a non-standard location in accordance with the spacing rules of the State of Utah. This location was picked due to topography and extensive seismic work which was done in the immediate area.

Wintershall Oil & Gas Corp. is the lease holder of all of Section 35, T37S - R25E, San Juan County, Utah. Therefore, no other lease holders will be affected by the drilling of the above proposed well.

We, therefore, request your permission to drill this well at a non-standard location.

Sincerely,

PERMITCO INC.



Lisa L. Green
Consultant for
Wintershall Oil and Gas Corp.

cc: Wintershall Oil & Gas Corp.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☒GAS
WELL ☐

OTHER

SINGLE
ZONE ☒MULTIPLE
ZONE ☐

2. NAME OF OPERATOR Wintershall Oil & Gas Corp.

5675 DTC Blvd., Englewood, CO 80111

303/694-0988

3. ADDRESS OF OPERATOR Permuto Inc. - Agent

1020 15th Street, Suite 22E, Denver, CO 80202 303/595-4051

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*

At surface

1940' FSL & 1100' FWL

At proposed prod. zone

NW/SW

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

16.5 miles NE of Hatch Trading Post

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)

220'

18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

None

16. NO. OF ACRES IN LEASE

640

19. PROPOSED DEPTH

6000'

17. NO. OF ACRES ASSIGNED
TO THIS WELL

40

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

5457' GR

22. APPROX. DATE WORK WILL START*

Upon approval

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	9 5/8"	36#	1250'	665 sx or sufficient to circ.
7 7/8"	5 1/2"	14 & 15.5#	6000'	250 sx or sufficient to cover zones of interest

Wintershall Oil & Gas Corp. proposes to drill a well to 6000' to test the Ismay and Desert Creek formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

DATE: 7/2/85

BY: [Signature]

WELL SPACING: 1/2 mile A-3

See Onshore Order No. 1 attached

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

[Signature]

TITLE

Consultant for

Wintershall Oil & Gas Corp. DATE 7/9/85

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

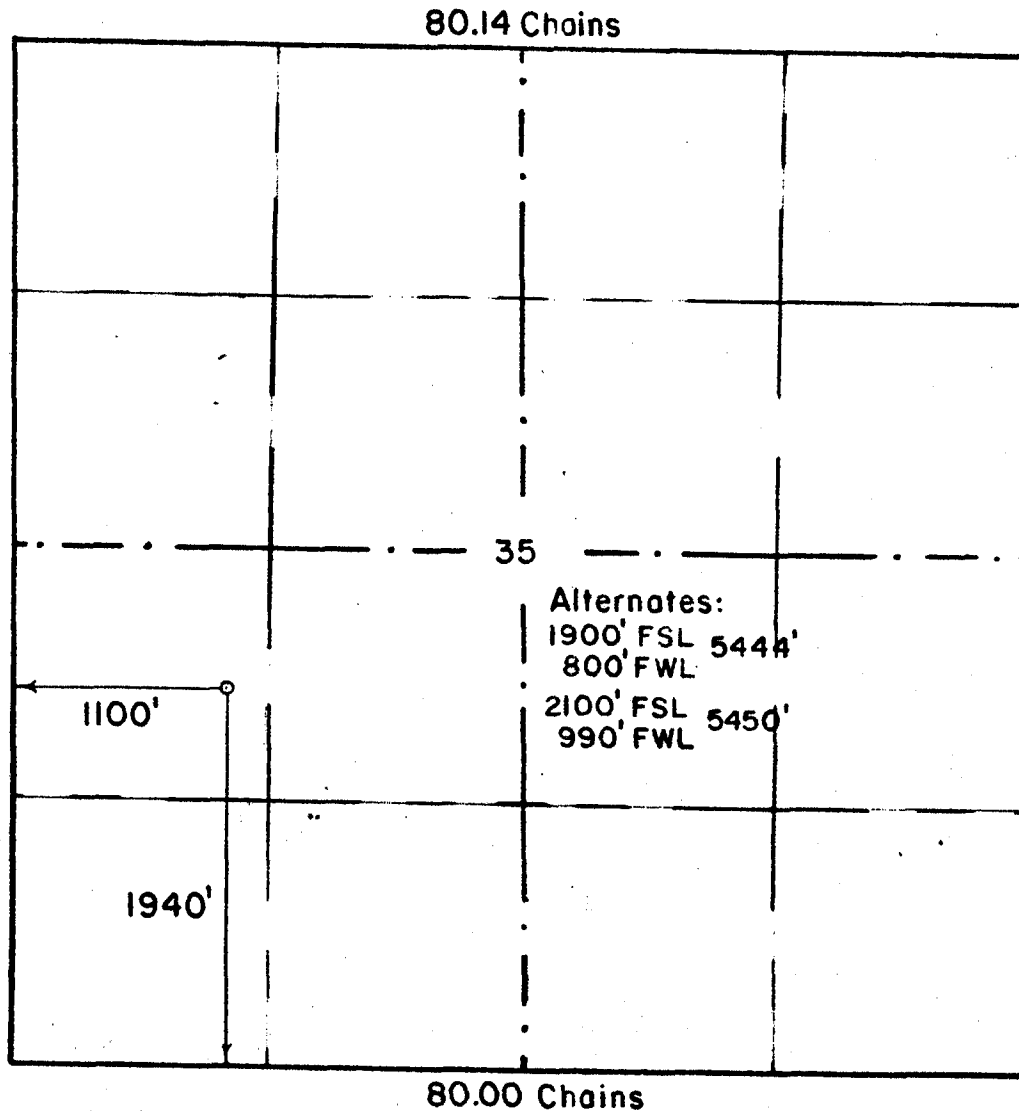
CONDITIONS OF APPROVAL, IF ANY:



POWERS ELEVATION

Plat #1

Well Location Plat



Operator Wintershall Oil & Gas Corp.		Well name Cow Canyon 35-13	
Section 35	Township 37 S	Range 25 E	Meridian S.L.M.
Footages 1940' FSL & 1100' FWL			County/State San Juan, Utah
Elevation 5457'	Requested by		
The above plat is true and correct to the best of my knowledge and belief.			
8 Feb. '84		 Gerald G. Huddleston, L.S.	

Wintershall Oil and Gas Corporation
5675 DTC Boulevard, Suite 200
Englewood, Colorado 80111 U.S.A.

**Wintershall
Oil and Gas Corporation**
Englewood, Colorado

Bureau of Land Management

Re: Cow Canyon #35-13
Sec. 35, T37S-R25E
San Juan, Utah

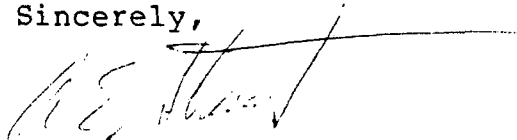
Gentlemen:

This letter is to inform you that Permitco is authorized to act as Agent and to sign documents on behalf of Wintershall Oil and Gas Corporation when necessary for filing county, state, and federal permits including Onshore Order No. 1, R-O-W applications, etc.; for the above-mentioned well.

It should be understood that Permitco is acting as Agent only in those matters stated above and is not responsible for drilling, completion, production, or compliance with regulations.

Wintershall Oil and Gas Corporation agrees to accept full responsibility for operations conducted in order to drill, complete, and produce the above-mentioned well.

Sincerely,



A. E. Straub
Vice President - Production

AES:ram

ONSHORE OIL & GAS ORDER NO. 1

Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

COW CANYON #35-13
1940' FSL and 1100' FWL
Sec. 35, T37S - R25E
San Juan County, Utah

RECEIVED

JUL 11 1985

DIVISION OF OIL
GAS & MINING

Prepared For:

WINTERSHALL OIL & GAS CORP.

By:

PERMITCO INC.
1020-15th Street, Suite 22-E
Denver, Colorado 80202

Copies Sent To:

- 4 - BIM - Moab, Utah
- 1 - BIM - Monticello, Utah
- 1 - Div. of Oil, Gas & Mining - SLC, Utah
- 3 - Wintershall Oil & Gas Corp. - Denver, Colorado
- 1 - John Lowry - Towaoc, Colorado

Permitco inc.

A Petroleum Permitting Company

ONSHORE ORDER NO.
Wintershall Oil & Gas Corp.
COW CANYON 35-13
1940' FSL and 1100' FWL
Sec. 35, T37S - R25E
San Juan County, Utah

DRILLING PROGRAM

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

1. The surface formation and estimated formation tops to be encountered are as follows:

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>
Morrison	196'	+5275'
Navajo	700'	+4771'
Chinle	1200'	+4271'
Cutler	2580'	+2891'
Honaker Trail	4350'	+1121'
Upper Ismay	5560'	- 89'
Lower Ismay	5744'	- 273'
✓ Desert Creek	5874'	- 403'
Akah - T.D.	5990'	- 519'

2. The estimated depths at which oil, gas, water or other mineral bearing zones are expected to be encountered are as follows:

<u>Substance</u>	<u>Formation</u>	<u>Anticipated Depth</u>
Water	Navajo	700'
Gas & Oil	Upper Ismay	5560'
Gas & Oil	Lower Ismay	5744'
Gas & Oil	Desert Creek	5874'

All fresh water and prospectively valuable minerals encountered during drilling, will be recorded by depth cased and cemented. All oil and gas shows will be tested to determine commercial potential.

3. Pressure control equipment will consist of a 10", 3000# BOP. (See BOP Diagram attached.)

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ONSHORE ORDER NO.
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San Juan County, Utah

DRILLING PROGRAM

Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

4. a. Casing

The proposed casing program is as follows:

<u>Purpose</u>	<u>Depth</u>	<u>Hole Size</u>	<u>O.D.</u>	<u>Wt.</u>	<u>Grade</u>	<u>Type</u>	<u>New or Used</u>
Surface	0-1250'	12-1/4"	9-5/8"	36#	J-55	ST&C	New
Produc.	0-4000'	7-7/8"	5-1/2"	14#	K-55	ST&C	New
Produc.	4000-5990'	7-7/8"	5-1/2"	15.5#	K-55	ST&C	New

b. Cement

The cementing program will be as follows:

Surface

Type and Amount

0-1250'

665 sx Class B or sufficient to circulate to surface.

Production

Type and Amount

250 sx 50/50 Poz with additives; or sufficient to cover zones of interest.

c. Auxiliary Equipment will be as follows:

1. Kelly cock.
2. Float above the bit.
3. A sub with a full opening valve will be on the floor when the kelly is not in use.
4. Monitoring of the system will be done visually.

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DRILLING PROGRAM

5. Drilling fluid will be as follows:

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>F/L</u>	<u>PH</u>
0-4000'	Gel & Water	8.5-9.0	35-40	N/C	7
4000-5990'	Gel Chemicals	9.5-10.2	30-35	6-8	10-12

6. Coring, logging and testing programs are as follows:

- a. The Desert Creek will be cored only in the event of a drilling break.
- b. The logging program will consist of the following: A Neutron Density, Dual Induction SFL and Dipmeter will be run from 4000-5990'. A Sonic Log will be run from surface to T.D.
- c. Drill Stem Tests will be run in the Upper and Lower Ismay and Desert Creek as required by shows.

Whether the well is completed as a dry hole or as a producer, "Well Completion or Recompletion Report and Log" (Form 3160-4) will be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the District Manager.

7. Abnormal conditions, bottom hole pressures and potential hazards.

- a. The maximum bottom hole pressure to be expected is 3500 psi.
- b. Wintershall Oil & Gas Corp. plans to spud the Cow Canyon #35-13 upon approval of this application and intends to complete the well within approximately one month after the well has reached T.D.

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DRILLING PROGRAM

- c. The operator will contact the San Juan Resource Area at 801/587-2201, 48 hours prior to beginning any dirt work on this location.
- d. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the District Manager. If operations are to be suspended, prior approval of the District Manager will be obtained and notification given before resumption of operations.
- e. The spud date will be reported orally to the San Juan Area Manager, a minimum of 24 hours before spudding. A Sundry Notice (Form 3160-5) will be sent within 24 hours of spudding, reporting the spud date and time. The Sundry will be sent to the District Manager.
- f. In accordance with Onshore Oil and Gas Order No. 1, this well will be reported on Form 9-329 "Monthly Report of Operations", starting with the month in which operations begin and continue each month until the well is physically plugged and abandoned. This report will be sent to the Moab BLM District Office, P. O. Box 970, Moab, Utah 84532.
- g. If a replacement rig is contemplated for completion operations, a "Sundry Notice" (Form 3160-5) to that effect will be filed, for prior approval of the District Manager. All conditions of this approved plan are applicable during all operations conducted with the replacement rig.
- h. If the well is successfully completed for production, then the District Manager will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communication, no later than the first business day following the date on which the well is placed on production.

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DRILLING PROGRAM

- i. No well abandonment operations will begin without the prior approval of the District Manager. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the District Manager. A "Subsequent Report of Abandonment" (Form 3160-5), will be filed with the District Manager, within 30 days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration.
- j. Final abandonment will not be approved until surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the San Juan Area Manager or his representative, or the appropriate Surface Managing Agency.
- k. A first production conference will be scheduled within 15 days after receipt of the first production notice. The operator will schedule the conference with the San Juan Area Manager.

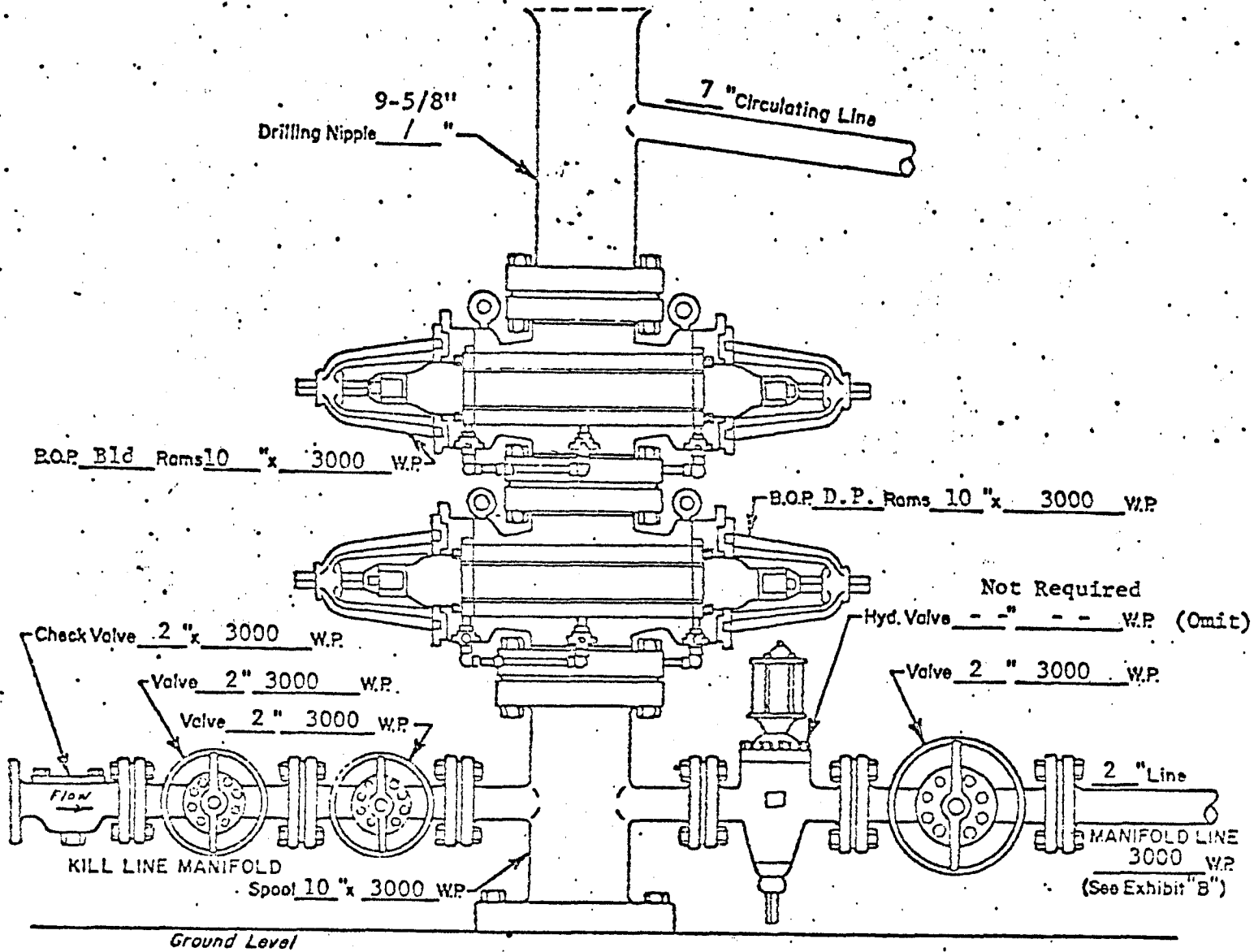
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COLEMAN DRILLING CO.

WELL NAME: _____

LOCATION : _____



WELL HEAD B.O.P.

3000 W.P.

☒ Hydraulic

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SURFACE USE PLAN

ONSHORE OIL & GAS ORDER NO. 1

Thirteen Point Surface Use Plan

1. Existing Roads

- a. The proposed well site is located 16.5 miles from Hatch Trading Post.
- b. Directions to the location from Hatch Trading Post are as follows:

Take the county road northerly 8.9 miles to the Perkins Ranch; take the Nancy Patterson road northeasterly 6.9 miles to a seismic trail. Turn right and follow seismic trail east for 0.6 miles to the location.
- c. The roads in the area are primarily county roads. The seismic trail and the county roads will be flat bladed as necessary. See Maps #1 and #2.
- d. Improvement to the existing access will be necessary and will be limited to the total existing disturbed width. The maximum total disturbed width will be 20 feet.
- e. All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.
- f. An encroachment permit will be obtained from the San Juan County Road Department, 801/587-2231, ext. 43.
- g. The archeological site on the south side of the seismic trail will be avoided.

2. Planned Access Roads

- a. No new access road is planned.
- b. No gates, cattleguards or fence cuts will be necessary.

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SURFACE USE PLAN

2. Planned Access Roads (cont.)

- c. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
- d. The access road will be water barred or brought to Class III Road Standards within 60 days of dismantling of the drilling rig. If this time frame cannot be met, the San Juan Area Manager will be notified so that temporary drainage control can be installed along the access road.
- e. No culverts will be necessary.
- f. Surfacing material will not be placed on the access road or location without prior BLM approval.

3. Location of Existing Wells Within a 1-Mile Radius of the Proposed Location. (See Map #3).

- a. Water Wells - none
- b. Injection or disposal wells - none
- c. Producing Wells - Three
- d. Drilling Wells - none

4. Location of Tank Batteries and Production Facilities.

- a. All permanent structures (onsite for six months or longer) constructed or installed (including oil well pump jacks) will be painted a flat, nonreflective, earthtone color to match the standard environmental colors, as determined by the Rocky Mountain Five-State Interagency Committee. All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. Facilities will be painted the same color as the existing Nancy Unit facilities.

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SURFACE USE PLAN

4. Production Facilities (cont.)

- b. If a tank battery is constructed on this lease, it will be surrounded by a dike of sufficient capacity to contain 1-1/2 times the storage capacity of the battery.
- c. Tank batteries will be placed as shown on Diagram #1.
- d. All loading lines will be placed inside the berm surrounding the tank battery.
- e. Any necessary pits will be properly fenced to prevent any wildlife entry. The production pit will be flagged overhead.
- f. All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to.
- g. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the District Manager.
- h. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.
- i. Gas meter runs for each well will be located within 500 feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and 500 feet downstream of the meter run or any production facilities. Meter runs will be housed and/or fenced.
- j. The oil and gas measurement facilities will be installed on the well location. The oil and gas meters will be calibrated in place prior to any deliveries. Tests for meter accuracy will be conducted monthly for the first three months on new meter installations and at least quarterly thereafter. The San Juan Area Manager will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports will be submitted to the Moab District Office. All meter measurement facilities will conform with the API standards for liquid hydrocarbons and the AGA standard for natural gas measurement.

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SURFACE USE PLAN

5. Location and Type of Water Supply

- a. All water needed for drilling purposes will be obtained from the Perkins Ranch, Sec. 7, T38S - R25E or a small BLM pond which is located in the SW SE Sec. 18, T37S - R26E. Directions to the water sources are shown on Maps #1 and #2. If the BLM pond is used the road will be rocked as needed.
- b. Water will be trucked to location over the roads marked on Maps #1 and #2.
- c. No water well is to be drilled on this lease.
- d. Use of water for this operation will approved by obtaining a temporary use permit from the Utah State Engineer, 801/637-1303, and by receiving permission from the land owner of surface management agency to use the land containing the water source.

6. Source of Construction Material

- a. Road surfacing and pad construction material will be obtained from the Montezuma Creek Pit operated by Urado Construction or private sources.
- b. The use of materials under BLM jurisdiction will conform with 43 CFR 3610.2.3. Construction material will not be located on lease.

7. Methods of Handling Waste Disposal

- a. The reserve pit will not be lined. At least half of the capacity will be in cut.
- b. Three sides of the reserve pit will be fenced with four strands of barbed wire before drilling starts. The fourth side will be fenced as soon as the drilling is completed. The fence will be kept in good repair while the pit is drying.

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SURFACE USE PLAN

7. Methods for Handling Waste Disposal (cont.)

- c. A trash pit will be constructed near the mud tanks and dug at least six feet into solid, undisturbed material. It will be totally enclosed with a fine wire mesh before the rig moves in. The road and pad will be kept litter free.
- d. Produced waste water will be confined to a unlined pit for a period not to exceed 90 days after initial production. During the 90-day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the District Manager's approval. Failure to file an application within the time allowed will be considered an incident of noncompliance, and will be grounds for issuing a shut-in order.
- e. A burning permit is required for burning trash between May 1 and October 31. This can be acquired by contacting the State Fire Warden, John Baker, at 801/587-2705.

8. Ancillary Facilities

- a. There are no airstrips, camps, or other facilities planned during the drilling of the proposed well.

9. Well Site Layout

- a. See Diagram #2 for rig layout. See Diagram #3 for cross section of drill pad. See Diagram #4 for cuts and fills.
- b. The location of mud tanks; reserve, burn and trash pits; pipe racks; living facilities and soil stockpiles will be shown on Diagram #2 and #4. The location will be laid out and constructed as discussed during the predrill conference.
- c. The top 12 inches of soil material will be removed from the location and stockpiled separate from the trees on the southwest side. Topsoil along the access will be reserved in place.

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SURFACE USE PLAN

9. Wellsite Layout (cont.)

- d. Access to the well pad will be from the southwest.

10. Reclamation

- a. Immediately upon completion of drilling, all trash and debris will be collected from the location and surrounding area. All trash and debris will be disposed of in the trash pit and will then be compacted and buried under a minimum of two feet of compacted soil.
- b. The operator or his contractor will contact the San Juan Resource Area office in Monticello, Utah (801/587-2201) 48 hours before starting reclamation work that involves earthmoving equipment and upon completion of restoration measures.
- c. Before any dirt work to restore the location takes place, the reserve pit must be completely dry.
- d. All disturbed areas will be recontoured to blend as nearly as possible with the natural topography. This includes removing all berms and refilling all cuts.
- e. The stockpiled topsoil will be spread evenly over the disturbed area. All disturbed areas will be ripped 12 inches deep with the contour.
- f. Water bars will be built as follows to control erosion.

<u>Grade</u>	<u>Spacing</u>
2%	Every 200 Feet
2-4%	Every 100 Feet
4-5%	Every 75 Feet
5+%	Every 50 Feet

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SURFACE USE PLAN

10. Reclamation (cont.)

- g. Seed will be broadcast between October 1 and February 28 with the following prescription. A harrow or similar implement will be dragged over the area to assure seed cover.
 - 1 lbs/acre Curlygrass (Hilaria Jamesil)
 - 2 lbs/acre Indian ricegrass (oryzopsis Hymenoides)
 - 2 lbs/acre Fourwing Saltbush (Atriplex Canenscens)
 - 1 lbs/acre Alkali sacaton (Sporobolus airoides)
 - 1 lbs/acre Wild sunflower (helianthus annuus)
 - 1 lbs/acre Winter Rye
- h. After seeding is complete, the stockpiled trees will be scattered evenly over the disturbed areas. The access will be blocked to prevent vehicular access.
- i. The reserve pit and that portion of the location and access road not needed for production and production facilities will be reclaimed as described in the reclamation section. Enough topsoil will be kept to reclaim the remainder of the location at a future date. This remaining stockpile of topsoil will be seeded in place using the prescribed seed mixture.

11. a. Surface Ownership

Federal

b. Mineral Ownership

Federal

12. Other Information

- a. There will be no change from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be used. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFR 3162.2.

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SURFACE USE PLAN

12. Other Information (cont.)

- b. "Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3164.
- c. The dirt contractor will be provided with an approved copy of the surface use plan.
- d. If subsurface cultural materials are exposed during construction, work in that spot will stop immediately and the San Juan Resource Area Office will be contacted. All people who are in the area will be informed by the operator that they are subject to prosecution for disturbing archeological sites or picking up artifacts. Salvage or excavation of identified archeological sites will be done by a BLM approved archeologist only if damage occurs.
- e. This permit will be valid for a period of one year from the date of approval. After permit termination, a new application will be filed for approval for any future operations.
- f. An archeological study was done by LaPlata Archaeological Consultants. No significant cultural resources were found and clearance is recommended. A copy of this report was previously submitted.
- g. A Deer Winter Range Stipulation is in effect on this lease. There will be no drilling operations between December 1st and March 31st, unless otherwise authorized by the District Manager.

13. Lessee's or Operator's Representative and Certification

Permit Matters

Permitco Inc.
Lisa L. Green
1020-15th Street
Suite 22-E
Denver, Co. 80202
303/595-4051

Drilling & Completion Matters

Wintershall Oil & Gas Corp.
5675 DTC Blvd.
Suite 200
Englewood, CO 80112
David Howell - 303/694-0988 (W)
John Lowry - 303/565-7773 (W)

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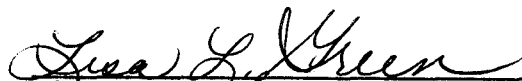
SURFACE USE PLAN

13. Lessee's or Operator's Certification (cont.)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Wintershall Oil & Gas Corp. and its contractors and subcontractors in conformity with the plan and the terms and conditions under which it is approved.

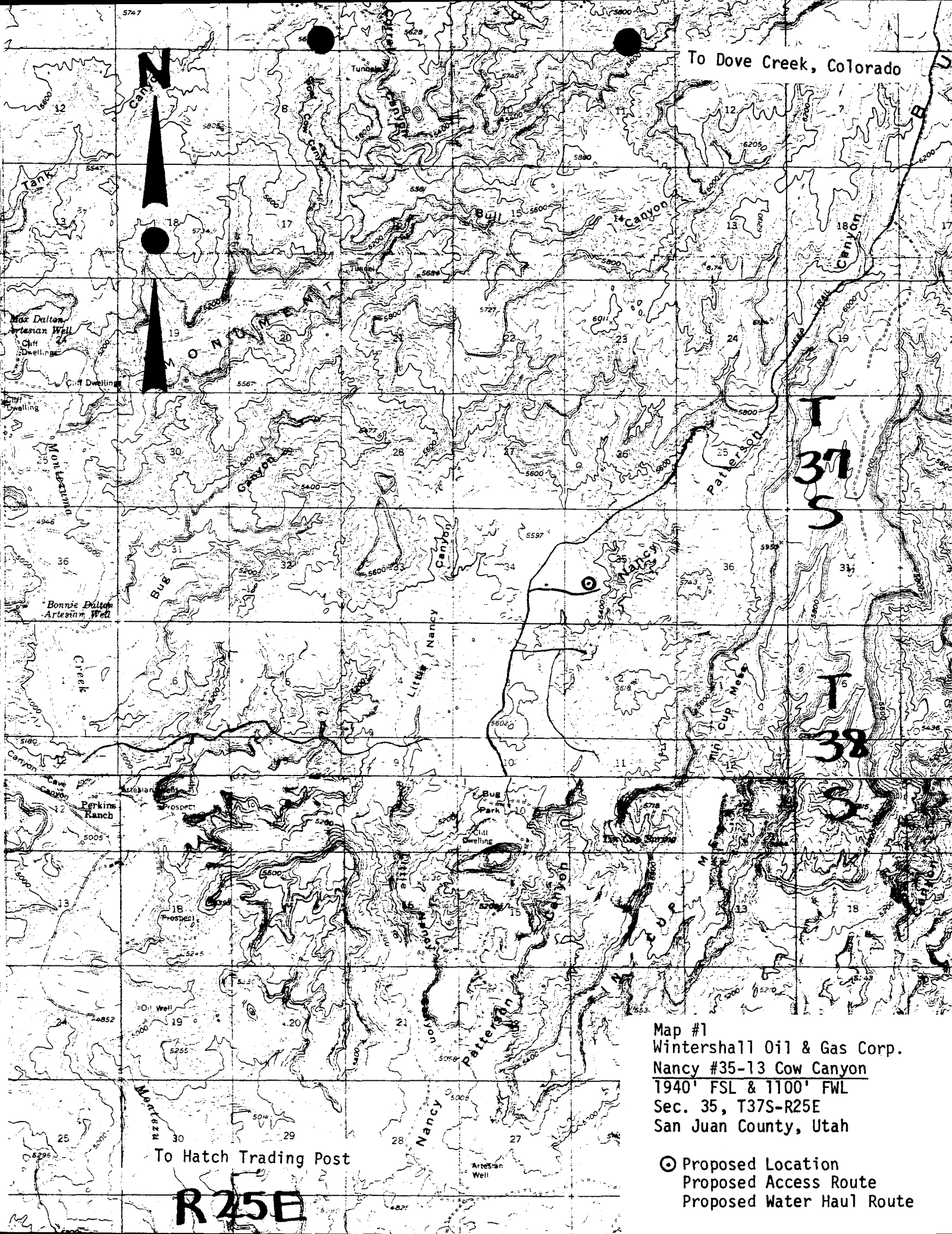
July 9, 1985
Date: _____



Lisa L. Green - PERMITCO INC.
Authorized Agent for:
WINTERSHALL OIL & GAS CORP.

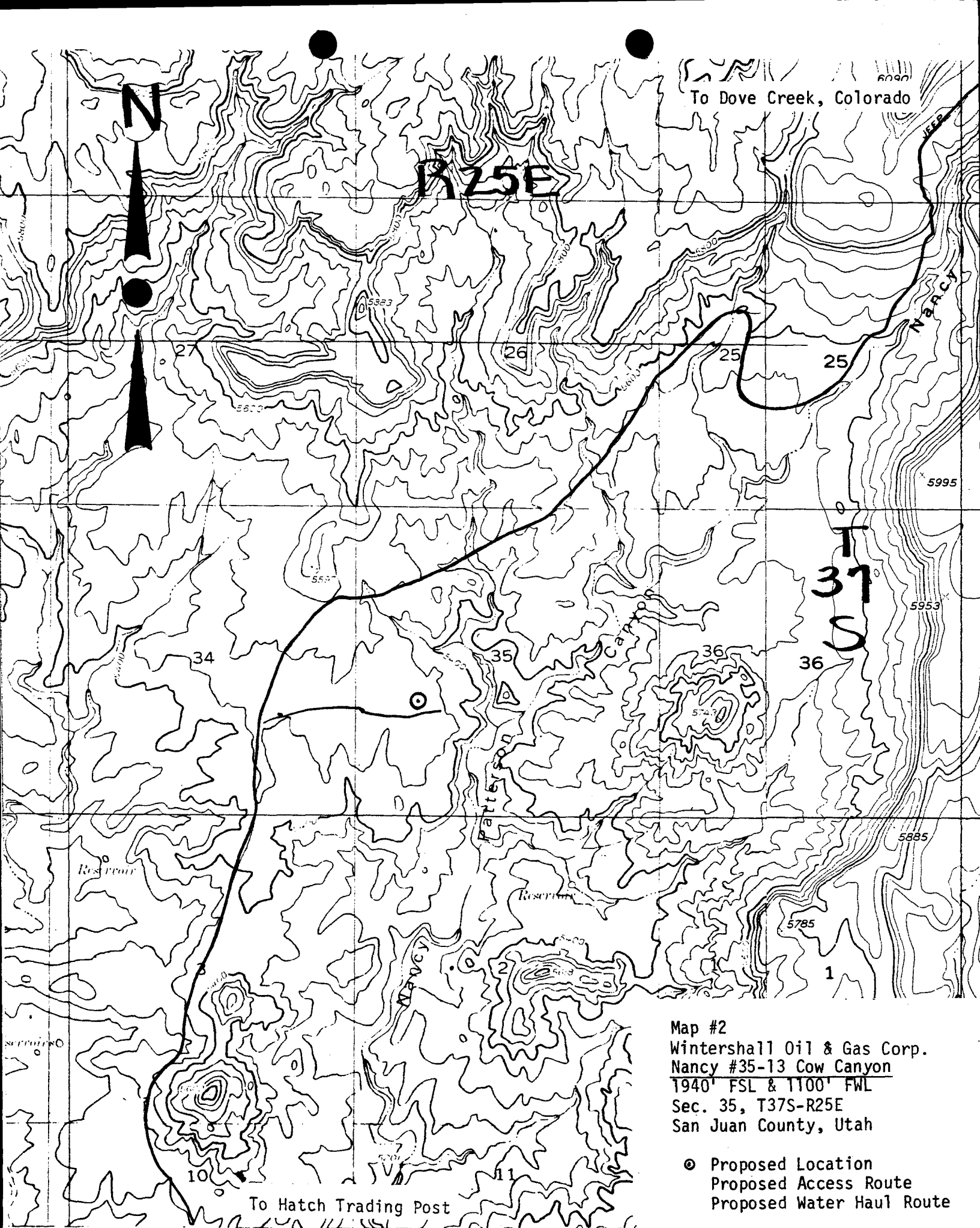
Permitco inc.

A Petroleum Permitting Company



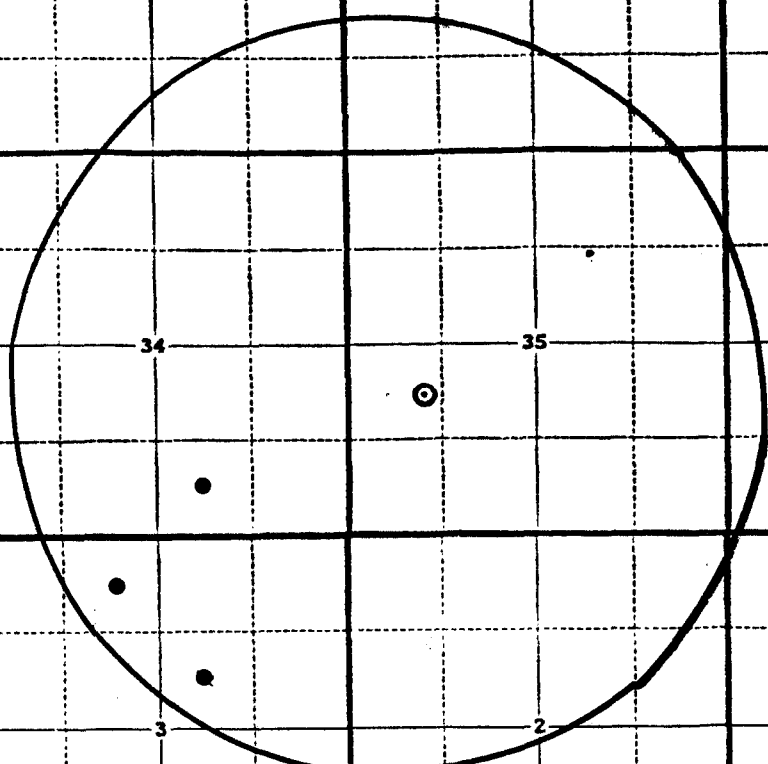
Map #1
Wintershall Oil & Gas Corp.
Nancy #35-13 Cow Canyon
1940' FSL & 1100' FWL
Sec. 35, T37S-R25E
San Juan County, Utah

○ Proposed Location
Proposed Access Route
Proposed Water Haul Route



R25E

N



T
37
S

T
38
S

Map #3
Wintershall Oil & Gas Corp.
Nancy #35-13 Cow Canyon
1940' FSL & 1100' FWL
Sec. 35, T37S-R25E
San Juan County, Utah

⊙ Proposed Location
• Producing Wells

Scale - 1" = 60'

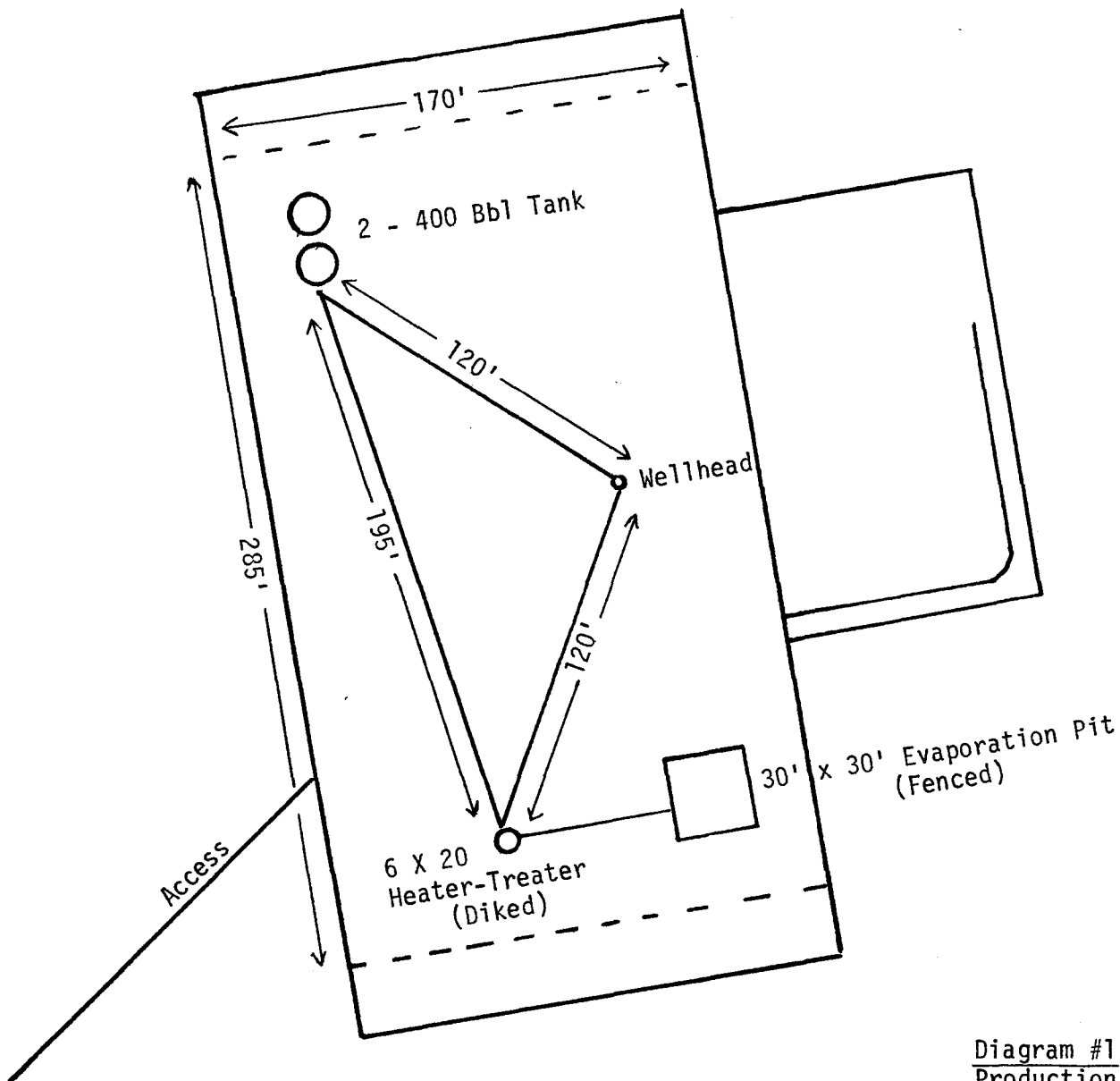


Diagram #1
Production Facility Layout
Wintershall Oil & Gas Corp.
Nancy #35-13 Cow Canyon
1940' FSL & 1100' FWL
Sec. 35, T37S-R25E
San Juan County, Utah

Scale - 1" = 60'

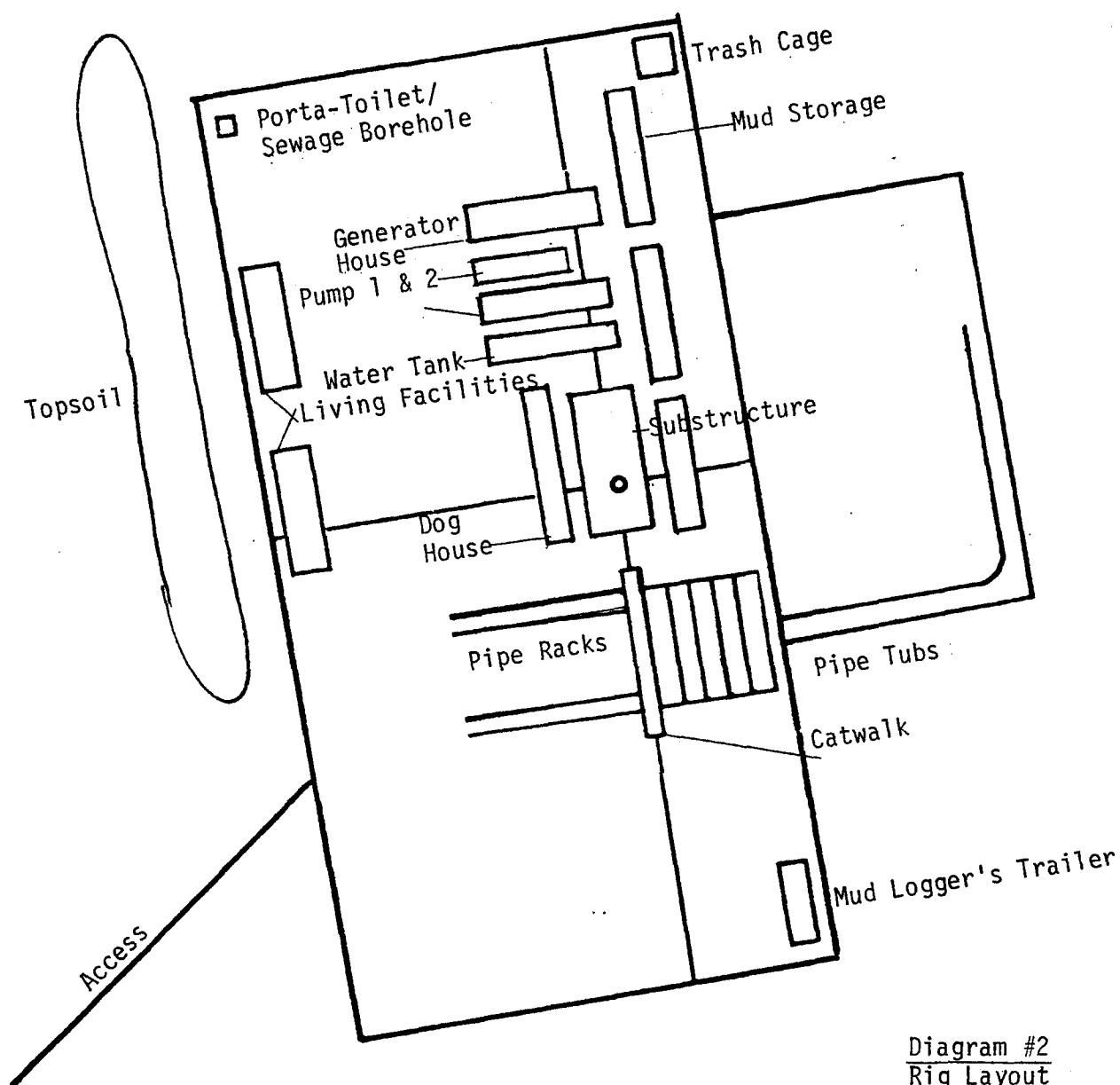


Diagram #2
Rig Layout
Wintershall Oil & Gas Corp.
Nancy #35-13 Cow Canyon
1940' FSL & 1100' FWL
Sec. 35, T37S-R25E
San Juan County, Utah



POWERS ELEVATION

Well Cow Canyon 35-13

OIL WELL ELEVATIONS — LOCATIONS
ENVIRONMENTAL — ARCHAEOLOGICAL SERVICES
800 SOUTH CHERRY STREET, SUITE 1201
DENVER, COLORADO 80222
PHONE NO. 303/321-2217

Cut ///////////////
Fill: ~~~~~

Scales: 1"=50'H.
1'=20'V.

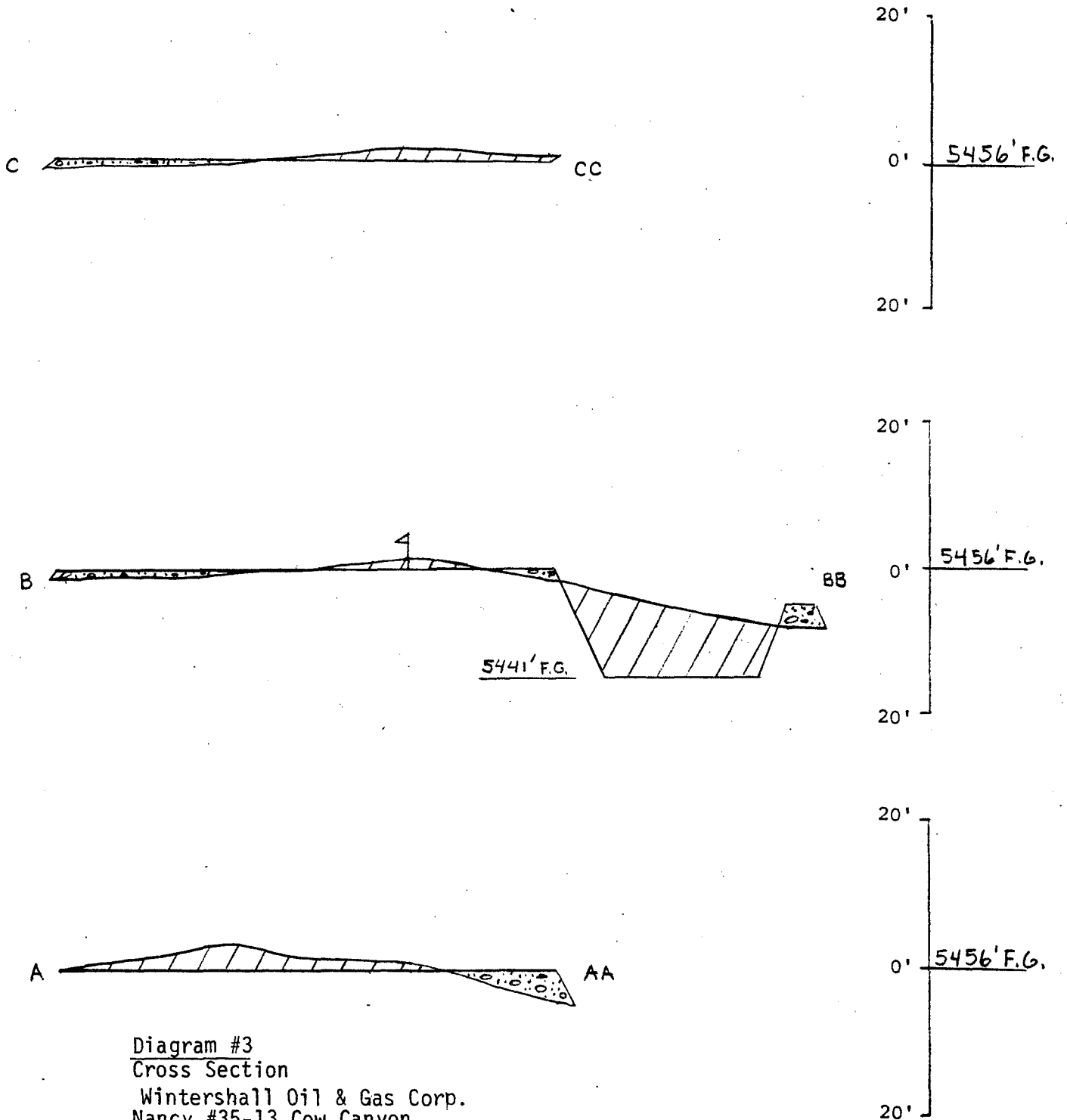


Diagram #3
Cross Section
Wintershall Oil & Gas Corp.
Nancy #35-13 Cow Canyon
1940' FSL & 1100' FWL
Sec. 35, T37S-R25E
San Juan County, Utah

Summary Report of
Inspection for Cultural ResourcesReport Acceptable Yes ☒ No ☐Mitigation Acceptable Yes ☐ No ☐

Comments: _____

Report Title LAC REPORT 8368aDevelopment Company Tricentrol ResourcesReport Date 03 844. Antiquities Permit No. 84-UT-011Responsible Institution LAC REPORTCounty SAN JUANFieldwork Location: TWN 37S Range 25E Section(s) 35TWN 78 Range 82 Section(s) 86Resource Area SJ TWN 94 Range 98 Section(s) 102PO= PONY EXPRESS, BR= BEAR RIVER, PR= PRICE RIVER, WS= WARM SPRINGS
BC= BOOK CLIFFS, HR= HOUSE RANGE, SE= SEVIER RIVER
HM= HENRY MOUNTAINS, BE= BEAVER RIVER, DX= DIXIE
KA= KANAB, ES= ESCALANTE, SJ= SAN JUAN, GR= GRAND
SR= SAN RAFAEL, DM= DIAMOND MOUNTAIN,FMI in spaces 65, 69, 81, 85, 97, 101 Only if:
V= Vernal Meridian
H= Half TownshipDescription of Examination Procedures: series of transects spaced 15m apart
walked over an area 300 x 200 feet in size to the east of the well
pad center stake; the area to the west was previously surveyed:9. Linear Miles Surveyed and/or 112 117Definable Acres Surveyed and/or 4 118 123* Legally Undefinable Acres Surveyed 124 129

(* A parcel hard to cadastrally locate i.e., center of section)

10. Inventory Type IR= Reconnaissance
I= Intensive
S= Statistical Sample1. Description of Findings (attach appendices, if appropriate) 12. Number Sites Found: 10 131 135

1 isolated find consisting of three upright slabs 1.5 meter area (cist); there were no artifacts in association feature is on eroded slope above and east of Nancy Patterson Canyon; bedrock exposed adjacent; depth to feature caps 10-20cm; the cist is located 35-40 feet from the edge of the pad and will not be disturbed during construction.

4. Actual/Potential National Register Properties Affected:


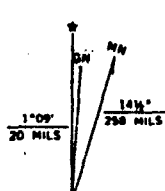
NONE

15. Literature Search, Location/Date:

Monticello BLM/8-29-83

16. Conclusion/Recommendations: This survey was conducted as a result of the relocation of Tricentrol's Nancy - Cow Canyon #35-13 well pad which was previously recommended for clearance (LAC Report 8368; Harden 1983). Reference to the previous report in regards to avoidance of site 42SA14695 located along the access road. Archeological clearance for the well pad relocation is recommended.

March 13, 1984



UTAH

QUADRANGLE LOCATION

OPERATOR Wintershall Oil & Gas Corp DATE 7-16-85
WELL NAME Little Nancy Unit #35-13
SEC NW SW 35 T 37S R 25E COUNTY San Juan

43-037-31175
API NUMBER

Lease
TYPE OF LEASE

CHECK OFF:

☒ PLAT

☒ BOND

☒ NEAREST WELL

☒ LEASE

☒ FIELD

☒ POTASH OR
OIL SHALE

PROCESSING COMMENTS:

Unit Well - OK on P.O.D.

Need water permit

APPROVAL LETTER:

SPACING:



A-3

Little Nancy
UNIT



C-3-a

CAUSE NO. & DATE



C-3-b



C-3-c

STIPULATIONS:

1- Water

Permitco inc.

A Petroleum Permitting Company

July 22, 1985

RECEIVED

JUL 25 1985

Division of Oil Gas & Mining
355 W. North Temple
Salt Lake City, Utah 84180

DIVISION OF OIL
GAS & MINING

Attn: Arlene

Re: Wintershall Oil & Gas Corp.
Little Nancy (Cow Canyon) #35-13
Sec. 35, T37S-R25E
San Juan County, Utah

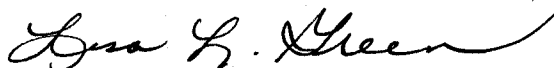
Dear Arlene:

This letter is to verify that Wintershall Oil & Gas Corp. will purchase water to drill the above mentioned well from Clyde Sanchez in Colorado.

If you should need additional information, please feel free to contact me.

Sincerely,

PERMITCO INC.



Lisa L. Green
Consultant

LLG/kkw

cc: Wintershall Oil & Gas Corp. - Denver
Wintershall Oil & Gas Corp. - Towaoc

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☒GAS
WELL ☐

OTHER

SINGLE
ZONE ☒MULTIPLE
ZONE ☐

2. NAME OF OPERATOR

Wintershall Oil & Gas Corp.

5675 DTC Blvd., Englewood, CO 80111 303/694-0988

3. ADDRESS OF OPERATOR

Permuto Inc. - Agent

1020 15th Street, Suite 22E, Denver, CO 80202 303/595-4051

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)

At surface

1940' FSL & 1100' FWL

At proposed prod. zone

RECEIVED

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

16.5 miles NE of Hatch Trading Post

JUL 25 1985

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drg. unit line, if any)

220'

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

None

16. NO. OF ACRES IN LEASE

DIVISION OF OIL
& MINING

6000'

17. NO. OF ACRES ASSIGNED
TO THIS WELL

40

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

5457' GR

22. APPROX. DATE WORK WILL START*

Upon approval

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	9 5/8"	36#	1250'	665 sx or sufficient to circ.
7 7/8"	5 1/2"	14 & 15.5#	6000'	250 sx or sufficient to cover zones of interest

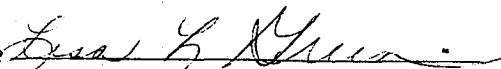
Wintershall Oil & Gas Corp. proposes to drill a well to 6000' to test the Ismay and Desert Creek formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

See Onshore Order No. 1 attached

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED



TITLE

Consultant for

Wintershall Oil & Gas Corp. DATE 7/9/85

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

/S/ GENE NODINE

TITLE

DISTRICT MANAGER

DATE

22 JUL 1985

CONDITIONS OF APPROVAL, IF ANY:

CONDITIONS OF APPROVAL ATTACHED

FLARING OR VENTING OF
GAS IS SUBJECT OF NTL 4-A
DATED 1/1/80

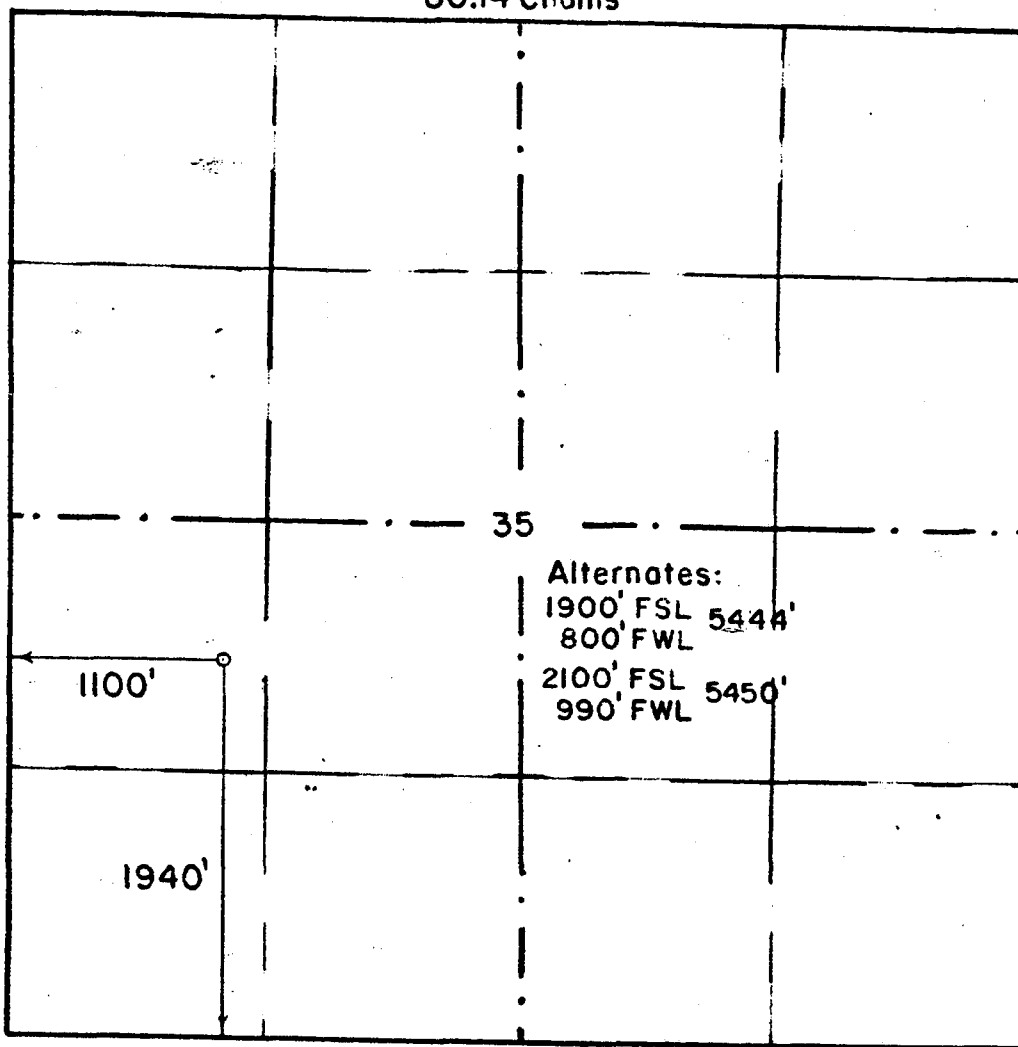


POWERS ELEVATION

Plat #1

Well Location Plat

80.14 Chains



80.00 Chains

Operator Wintershall Oil & Gas Corp.		Well name Cow Canyon 35-13	
Section 35	Township 37 S	Range 25 E	Meridian S.L.M.
Footages 1940' FSL & 1100' FWL			County/State San Juan, Utah
Elevation 5457'	Requested by		
The above plat is true and correct to the best of my knowledge and belief.			
8 Feb. '84		<u>Gerald G. Huddleston</u> Gerald G. Huddleston, L.S.	

Wintershall Oil & Gas Corp.
Well No. Little Nancy Unit-Cow Canyon 35-13
Sec. 35, T. 37 S., R. 25 E.
San Juan County, Utah
Lease U-18452

CONDITIONS OF APPROVAL

A. DRILLING PROGRAM

1. A backup source, capable of closing the B.O.P.'s in case of a primary source failure, will be available.
2. Both casing strings will be tested to at least 1000 psi.
3. B.O.P.'s will be tested to at least 1500 psi.
4. All pressure tests will be recorded in the driller's log.
5. All lease operations will be conducted in full compliance with applicable regulations (43 CFR 3100), Onshore Oil and Gas Order 1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions and the approved plan will be made available to the field representative to insure compliance.
6. Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported to the Office in accordance with requirements of NTL-3A.
7. Approval to vent/flare gas during initial well evaluation will be obtained from the District Office. This preliminary approval will not exceed 30 days. Approval to vent/flare beyond this initial test period will require District Office approval pursuant to guidelines in NTL-4A.
8. Upon completion of approved plugging, a dry hole marker will be erected in accordance with 43 CFR 3162.6. The top of the marker will be closed or capped. The following minimum information will be permanently placed on the marker; "Fed" or "Ind", as applicable, "Lease number", "Well number", location of well by 1/41/4 section, township, and range.
9. Your contact with the District Office is:

Greg Noble, Petroleum Engineer

Office Phone: 801-259-6111
Ext 229
Home Phone: 801-259-8811

Address:
82 East Dogwood, P.O. Box 970
Moab, Utah 84532



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

July 23, 1985

Wintershall Oil & Gas Corporation
5675 DTC Boulevard
Englewood, Colorado 80111

Gentlemen:

Re: Well No. Little Nancy Unit 35-13 - NW SW Sec. 35, T. 37S, R. 25E
1940' FSL, 1100' FWL - San Juan County, Utah

Approval to drill the above-referenced oil well is hereby granted in accordance with Section 40-6-18, Utah Code Annotated, as amended 1983; and predicated on Rule A-3, General Rules and Regulations and Rules of Practice and Procedure, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification to the Division within 24 hours after drilling operations commence.
2. Submittal to the Division of completed Form OGC-8-X, Report of Water Encountered During Drilling.
3. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 298-7695, or R. J. Firth, Associate Director, (Home) 571-6068.
4. Compliance with the requirements and regulations of Rule C-27, Associated Gas Flaring, General Rules and Regulations, Oil and Gas Conservation.

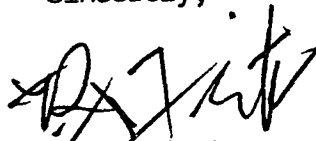
Page 2

Wintershall Oil & Gas Corporation
Well No Little Nancy Unit 35-13
July 23, 1985

5. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-037-31175.

Sincerely,



R. J. Firth
Associate Director, Oil & Gas

as

Enclosures

cc: Branch of Fluid Minerals
Lisa Green - Permitco

DIVISION OF OIL, GAS AND MINING

SPODDING INFORMATION

API #43-037-31175

NAME OF COMPANY: WINTERSHALL OIL & GASWELL NAME: LITTLE NANCY UNIT 35-13SECTION NW SW 35 TOWNSHIP 37S RANGE 25E COUNTY San JuanDRILLING CONTRACTOR ColemanRIG # 3SPUDDED: DATE 7-26-85TIME 10:15 PMHow Rotary

DRILLING WILL COMMENCE _____

REPORTED BY David H OwellTELEPHONE # 303-694-0988DATE 7-29-85 SIGNED AS

Contractor Coleman
Rig No. 3
Spot --
Sec. 35
Twp. 37S
Rng. 25E
Field --
County San Juan
State Utah
Elevation 5470 ft.
Formation Lower Ismay

Top Choke 1/4"
Bottom Choke 3/4"
Size Hole 7 7/8"
Size Rat Hole --
Size & Wt. D. P. 4 1/2" XH 16.60#
Size Wt. Pipe --
I. D. of D. C. 2 1/4"
Length of D. C. 560 ft.
Total Depth 5600 ft.
Interval Tested 5518-5611
Type of Test Bottom Hole
Conventional

Flow No. 1 28 Min.
Shut-in No. 1 60 Min.
Flow No. 2 58 Min.
Shut-in No. 2 118 Min.
Flow No. 3 -- Min.
Shut-in No. 3 -- Min.

Bottom Hole Temp. 131⁰F
Mud Weight 10.2#
Gravity --
Viscosity 36

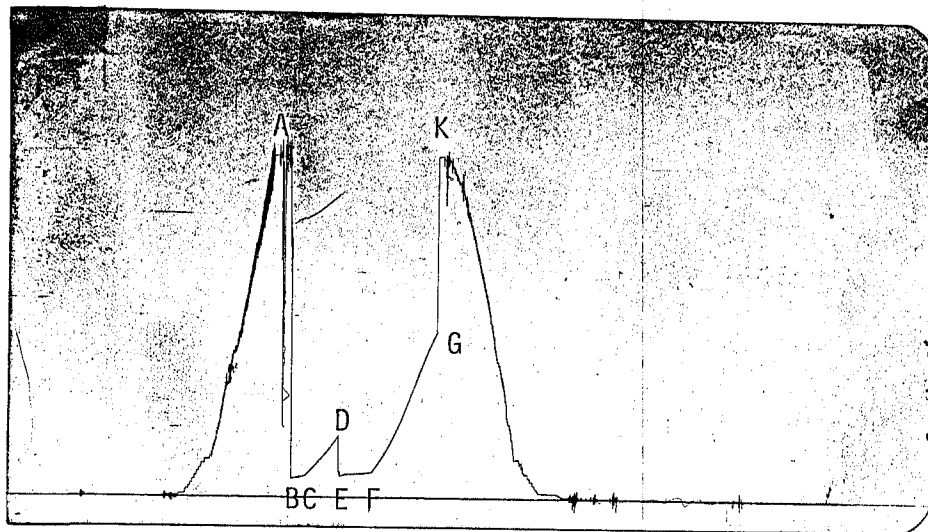
Tool opened @ 5:30 a.m.

Outside Recorder

PRD Make Kuster K-3
No. 7653 Cap. 4000 @ 5533'

	Press	Corrected
Initial Hydrostatic	A	2975
Final Hydrostatic	K	2975
Initial Flow	B	165
Final Initial Flow	C	190
Initial Shut-in	D	540
Second Initial Flow	E	187
Second Final Flow	F	219
Second Shut-in	G	1441
Third Initial Flow	H	--
Third Final Flow	I	--
Third Shut-in	J	--

Lynes Dist. Cortez, CO
Our Tester: Bryan Scott
Witnessed By: Ralph Stone



Did Well Flow - Gas No Oil No Water No

RECOVERY IN PIPE:

391 ft. Slightly gas-cut drilling mud w/ trace oil = 1.91 Bbls

Blow Description:

1st Flow: Tool opened with a weak surface blow, increasing to a 2" blow in 5 minutes, decreasing to a surface blow in 15 minutes and remaining throughout the flow.

2nd Flow: Tool opened with a 2" underwater blow, increasing to a 2 psi blow in 5 minutes, decreasing to a 1 1/2 psi blow in 45 minutes and remaining throughout the flow.

Comments:

The test results indicate a mechanically successful test. The flow and shut-in curves suggest very low permeability within the zone tested.

Operator Wintershall Oil & Gas Corp.
Address 5675 DTC Blvd., #200
Englewood, CO 80111

Well Name and No. Nancy-Cow Canyon #35-13
Ticket No. 00767

Date 8-11-85

DST No. 1
No. Final Copies 11

DST#: 1

NANCY-COW CANYON #35-13

5518 - 5611ft.

Location: SEC. 35 T37S R25E
 Test Type: BOTTOM HOLE CONVENTIONAL
 Formation: LOWER ISMAY

Recorder Number: 6021
 Recorder Depth: 5528 ft.

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	ABSCISSA	PRESSURE SQUARED psi ² /10 ⁶
A	INITIAL HYDROSTATIC	0.00		2958.0		
B	START OF 1st FLOW	0.00		138.0		
	1st FLOW PERIOD	2.00	5.0	143.0		
		4.00	15.0	153.0		
		6.00	20.0	158.0		
		8.00	25.0	163.0		
		10.00	30.0	168.0		
		12.00	35.0	173.0		
		16.00	45.0	183.0		
		18.00	45.0	183.0		
		20.00	50.0	188.0		
		22.00	55.0	193.0		
		24.00	55.0	193.0		
		26.00	60.0	198.0		
C	END OF 1st FLOW	28.00	65.0	203.0		
	1st SHUTIN PERIOD	0.00	0.0	203.0	0.0000	
		4.00	20.0	223.0	8.0000	
		6.00	30.0	233.0	5.6667	
		8.00	40.0	243.0	4.5000	
		10.00	50.0	253.0	3.8000	
		12.00	60.0	263.0	3.3333	
		14.00	75.0	278.0	3.0000	
		16.00	80.0	283.0	2.7500	
		20.00	105.0	308.0	2.4000	
		22.00	115.0	318.0	2.2727	
		24.00	125.0	328.0	2.1667	
		26.00	135.0	338.0	2.0769	
		28.00	150.0	353.0	2.0000	
		30.00	160.0	363.0	1.9333	
		32.00	170.0	373.0	1.8750	
		36.00	190.0	393.0	1.7778	
		38.00	205.0	408.0	1.7368	
		40.00	215.0	418.0	1.7000	
		42.00	230.0	433.0	1.6667	
		44.00	240.0	443.0	1.6364	
		46.00	255.0	458.0	1.6087	

DST#: 1

NANCY-COW CANYON #35-13

5518 - 5611ft.

Location: SEC. 35 T37S R25E
 Test Type: BOTTOM HOLE CONVENTIONAL
 Formation: LOWER ISMAY

Recorder Number: 6021
 Recorder Depth: 5528 ft.

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	ABSCISSA	PRESSURE SQUARED psi ² /10 ⁶
		48.00	265.0	468.0	1.5833	
		52.00	290.0	493.0	1.5385	
		54.00	305.0	508.0	1.5185	
		56.00	320.0	523.0	1.5000	
		58.00	335.0	538.0	1.4828	
D	END OF 1st SHUTIN	60.00	345.0	548.0	1.4667	
E	START OF 2nd FLOW	0.00		168.0		
	2nd FLOW PERIOD	4.00	30.0	198.0		
		8.00	35.0	203.0		
		12.00	35.0	203.0		
		16.00	40.0	208.0		
		20.00	40.0	208.0		
		24.00	40.0	208.0		
		28.00	45.0	213.0		
		32.00	45.0	213.0		
		36.00	50.0	218.0		
		40.00	50.0	218.0		
		44.00	50.0	218.0		
		48.00	50.0	218.0		
		52.00	55.0	223.0		
		56.00	55.0	223.0		
F	END OF 2nd FLOW	58.00	65.0	233.0		
	2nd SHUTIN PERIOD	0.00	0.0	233.0	0.0000	
		2.00	15.0	248.0	44.0000	
		4.00	30.0	263.0	22.5000	
		6.00	40.0	273.0	15.3333	
		10.00	70.0	303.0	9.6000	
		12.00	80.0	313.0	8.1667	
		14.00	95.0	328.0	7.1429	
		16.00	110.0	343.0	6.3750	
		18.00	125.0	358.0	5.7778	
		20.00	140.0	373.0	5.3000	
		22.00	160.0	393.0	4.9091	
		26.00	190.0	423.0	4.3077	
		28.00	205.0	438.0	4.0714	
		30.00	225.0	458.0	3.8667	

DST#: 1

NANCY-COW CANYON #35-13

5518 - 5611ft.

Location: SEC. 35 T37S R25E
 Test Type: BOTTOM HOLE CONVENTIONAL
 Formation: LOWER ISMAY

Recorder Number: 6021
 Recorder Depth: 5528 ft.

TIME-PRESSURE LISTING

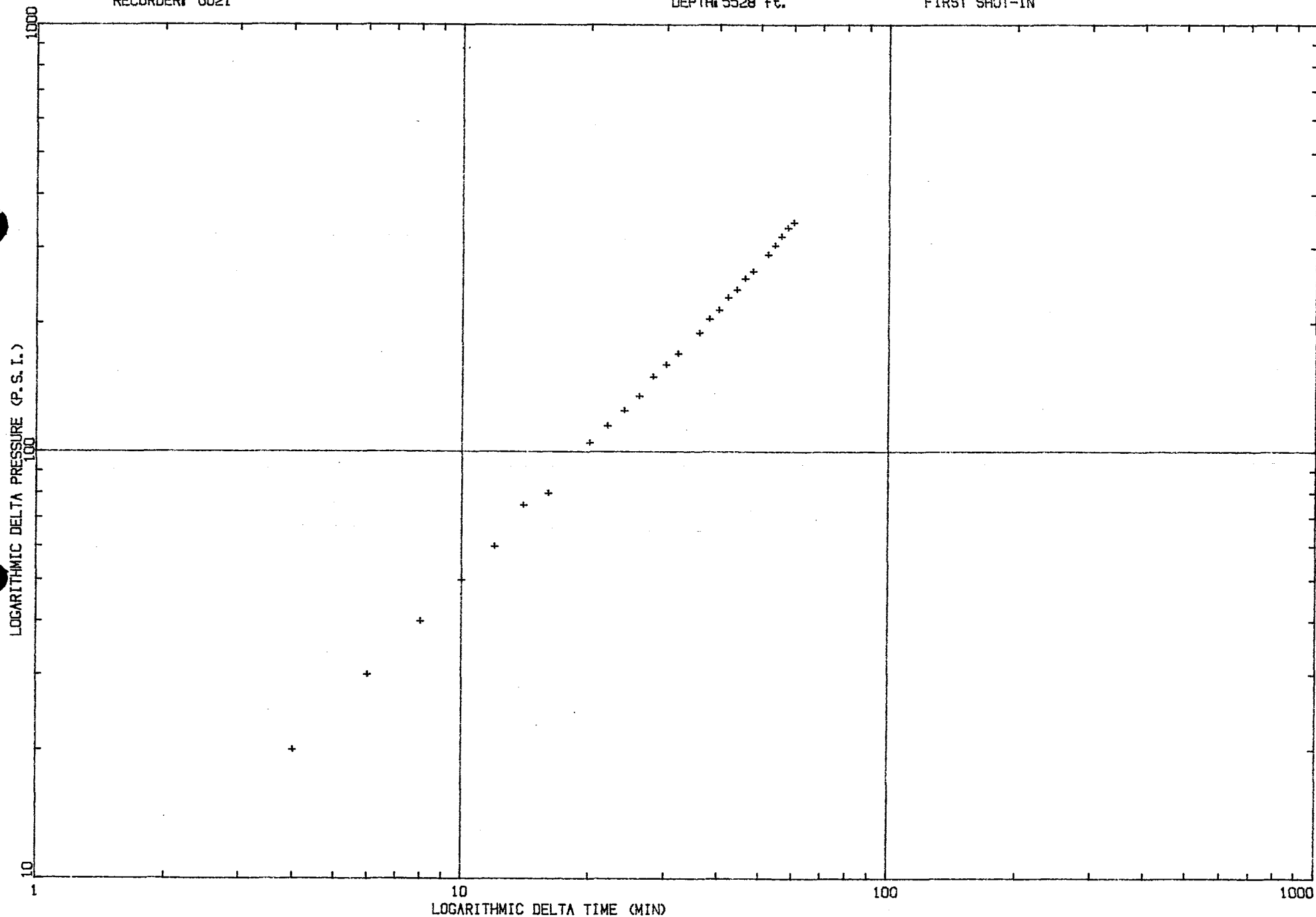
CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	ABSCISSA	PRESSURE SQUARED psi ² /10 ⁶
		34.00	260.0	493.0	3.5294	
		38.00	295.0	528.0	3.2632	
		42.00	335.0	568.0	3.0476	
		46.00	375.0	608.0	2.8696	
		50.00	415.0	648.0	2.7200	
		54.00	460.0	693.0	2.5926	
		58.00	505.0	738.0	2.4828	
		62.00	550.0	783.0	2.3871	
		66.00	595.0	828.0	2.3030	
		70.00	645.0	878.0	2.2286	
		74.00	695.0	928.0	2.1622	
		78.00	745.0	978.0	2.1026	
		82.00	795.0	1028.0	2.0488	
		86.00	845.0	1078.0	2.0000	
		90.00	895.0	1128.0	1.9556	
		94.00	945.0	1178.0	1.9149	
		98.00	990.0	1223.0	1.8776	
		102.00	1040.0	1273.0	1.8431	
		106.00	1085.0	1318.0	1.8113	
		110.00	1125.0	1358.0	1.7818	
		114.00	1165.0	1398.0	1.7544	
G	END OF 2nd SHUTIN	118.00	1205.0	1438.0	1.7288	
Q	FINAL HYDROSTATIC	0.00		2963.0		

* VALUES USED FOR EXTRAPOLATIONS

OPERATOR: WINTERSHALL OIL & GAS CORP.
LOCATION: SEC. 35 T37S R25E
RECORDER: 6021

WELL NAME: NANCY-COW CANYON #35-13
DST #: 1
DEPTH: 5528 ft.

FIRST SHUT-IN



OPERATOR: WINTERSHALL OIL & GAS CORP.

WELL NAME: NANCY-COW CANYON #35-13

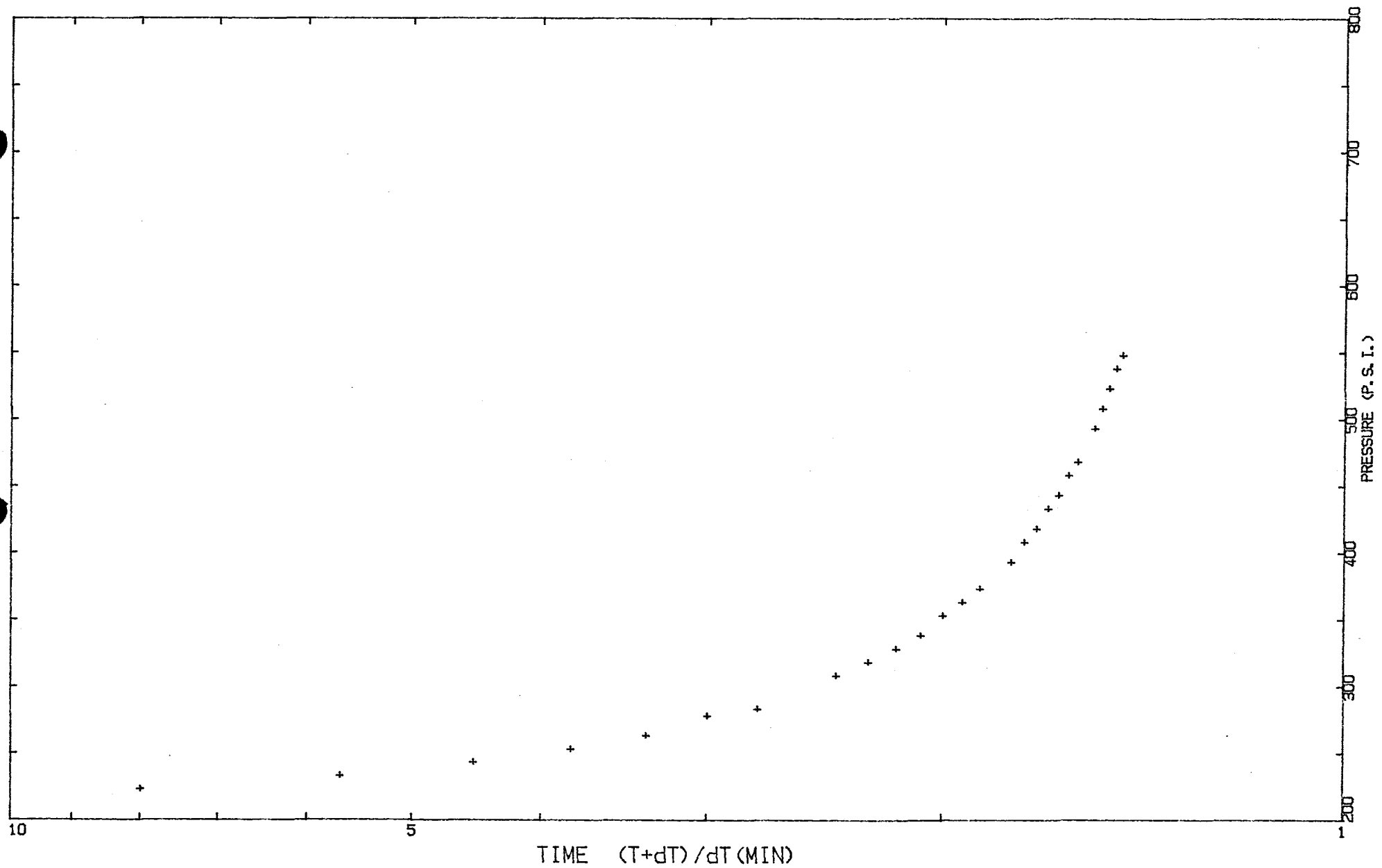
LOCATION: SEC. 35 T37S R25E

DST #: 1

FIRST SHUT-IN

RECORDER: 6021

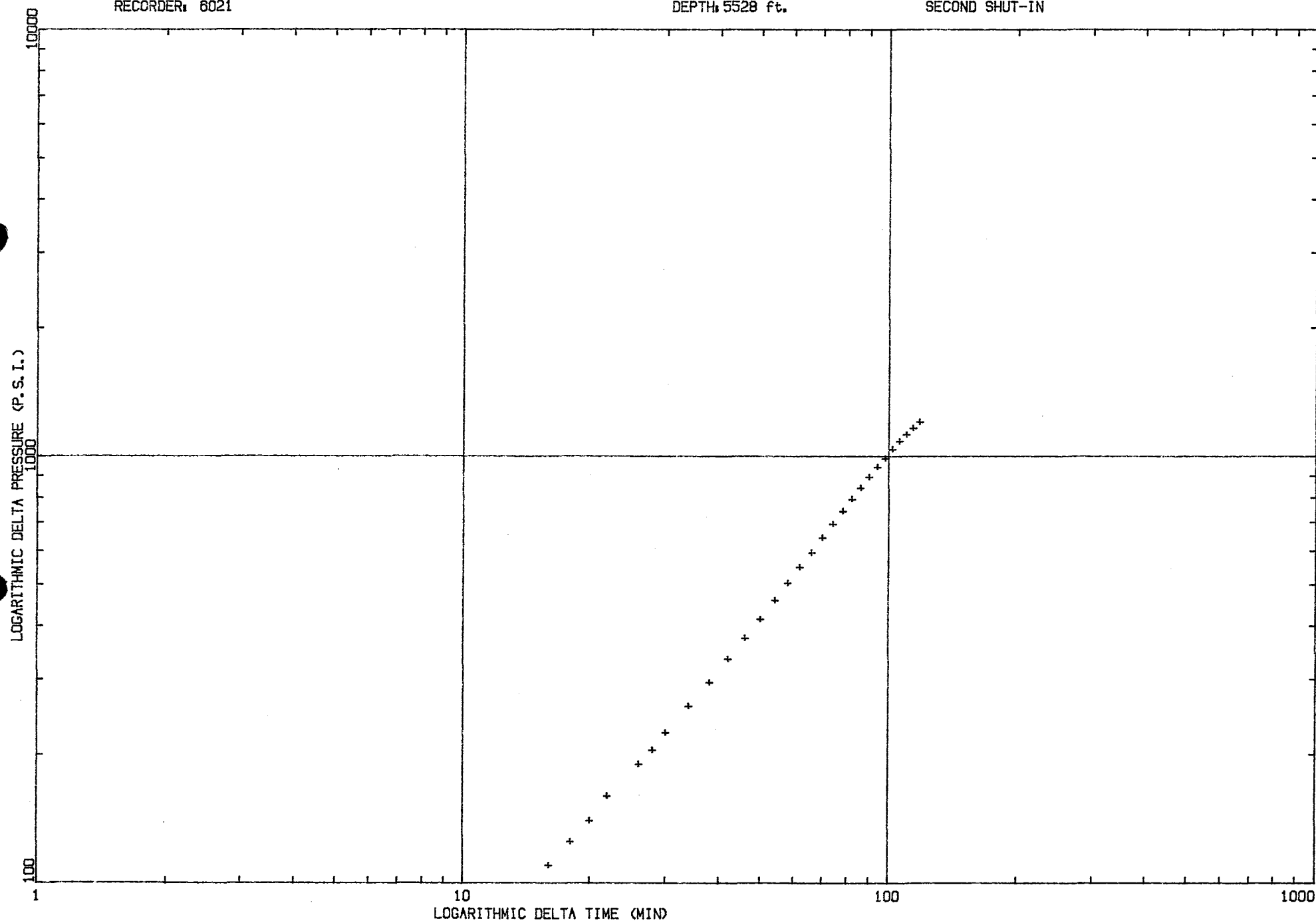
DEPTH: 5528 ft.



OPERATOR: WINTERSHALL OIL & GAS CORP.
LOCATION: SEC. 35 T97S R25E
RECORDER: 6021

WELL NAME: NANCY-COW CANYON #35-13
DST #: 1
DEPTH: 5528 ft.

SECOND SHUT-IN



OPERATOR: WINTERSHALL OIL & GAS CORP.

WELL NAME: NANCY-COW CANYON #35-13

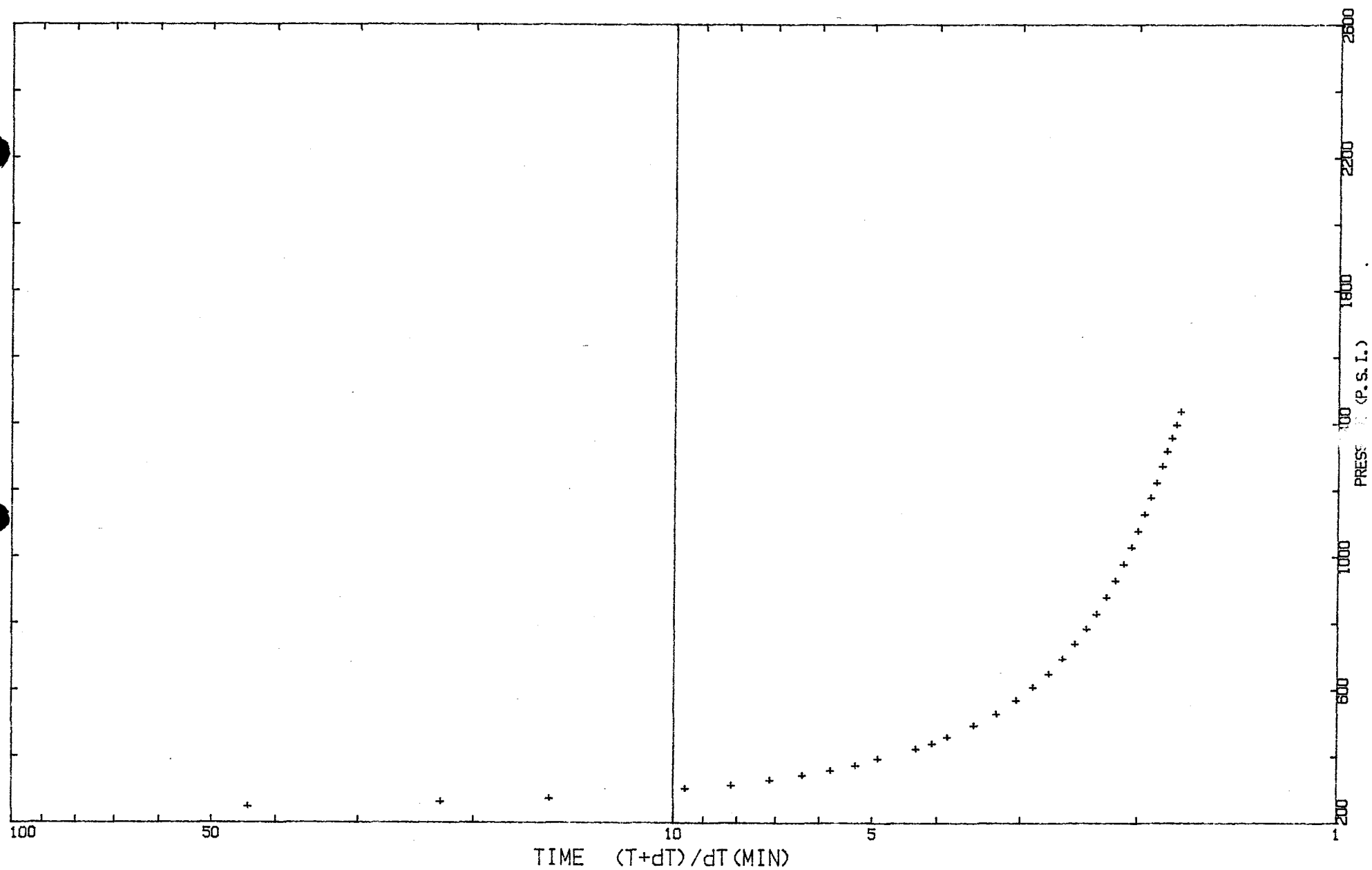
LOCATION: SEC. 35 T37S R25E

DST #: 1

SECOND SHUT-IN

RECORDER: 6021

DEPTH: 5528 ft.



WINTERSHALL OIL & GAS CORP.

Page 1

DST#: 1

NANCY-COW CANYON #35-13

5518 - 5611ft.

Location: SEC: 35 T37S R25E
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: LOWER ISMAY

Recorder Number: 6021
Recorder Depth: 5528

SAMPLE DATA

SAMPLE CHAMBER:

Capacity of sample chamber	2250	cc
Volume of sample.....	1850	cc
Pressure in sampler.....	100	psig
Where sampler was drained...	on location	

Sampler contained:

Oil	trace	cc	@	Degrees F
Mud	1850	cc		
Gas	.13	cu-ft		

RESISTIVITY DATA:

Top.....:	
Middle.....:	
Bottom.....:	
Sampler.....:	20 000 PPM NACL
Mud pit.....:	1500 PPM NACL
Make-up Water...:	



LYNES INC.

DMR-312 DIGITAL MEMORY RECORDER NO. 6021 CAP 10000 AT 5528'

OPERATOR Wintershall Oil & Gas Corp. WELL NAME Nancy-Cow Canyon #35-13

TICKET NO. 00767

DST. NO. 1

04:57:00 T 124.187

Initial Hydro. -2957.50

2957.50

2957.50

2957.50

2957.50

2947.50

2957.50

05:13:00 T 127.562

2972.50

2872.50

2957.50

2957.50

2957.50

2957.50

2967.50

05:29:00 T 128.937

Start 1st Flow -137.500

142.500

152.500

157.500

162.500

167.500

172.500

05:45:00 T 129.312

182.500

182.500

187.500

192.500

192.500

197.500

End 1st Flow -202.500

06:01:00 T 129.562

222.500

232.500

242.500

252.500

262.500

277.500

282.500

06:17:00 T 129.812

307.500

317.500

327.500

337.500

352.500

362.500

372.500

06:33:00 T 130.187

392.500

407.500

417.500

432.500

442.500

457.500

467.500

06:49:00 T 130.437

492.500

507.500

522.500

537.500

End 1st Shutin -547.500

192.500

Start 2nd Flow -167.500

07:05:00 T 130.312

197.500

202.500

202.500

202.500

202.500

202.500

207.500

07:21:00 T 130.312

207.500

207.500

207.500

212.500

212.500

212.500

212.500

07:37:00 T 130.562

217.500

217.500

217.500

217.500

217.500

217.500

217.500

07:53:00 T 130.687

222.500

222.500

222.500

End 2nd Flow -232.500

247.500

262.500

272.500

08:09:00 T 130.812

302.500

312.500

327.500

342.500

357.500

372.500

392.500

08:25:00 T 131.062

422.500

437.500

457.500

472.500

492.500

507.500

527.500

08:41:00 T 131.187

567.500

582.500

607.500

627.500

647.500

667.500

692.500

08:57:00 T 131.187

737.500

757.500

782.500

802.500

827.500

852.500

877.500

09:13:00 T 131.312

927.500

952.500

977.500

1002.50

1027.50

1052.50

1077.50

09:29:00 T 131.437

1127.50

1152.50

1177.50

1202.50

1222.50

1247.50

1272.50

09:45:00 T 131.437

1317.50

1337.50

1357.50

1382.50

1397.50

1422.50

1437.50

End 2nd Shutin 10:01:00 T 131.562

2962.50

2962.50

2962.50

Final Hydro. -2962.50

2612.50

2947.50

2952.50

10:17:00 T 131.687

DST#: 1

NANCY-COW CANYON #35-13

5518 - 5611ft.

PRESSURE RECORDER NUMBER : 24552

DEPTH : 5502.00ft.

LOCATION : INSIDE

TYPE : K-3

CAPACITY : 6625.00psi

PRESSURE

psi

A)Initial Hydro : 2945.0

B)1st Flow Start: 146.0

C)1st Flow End : 157.0

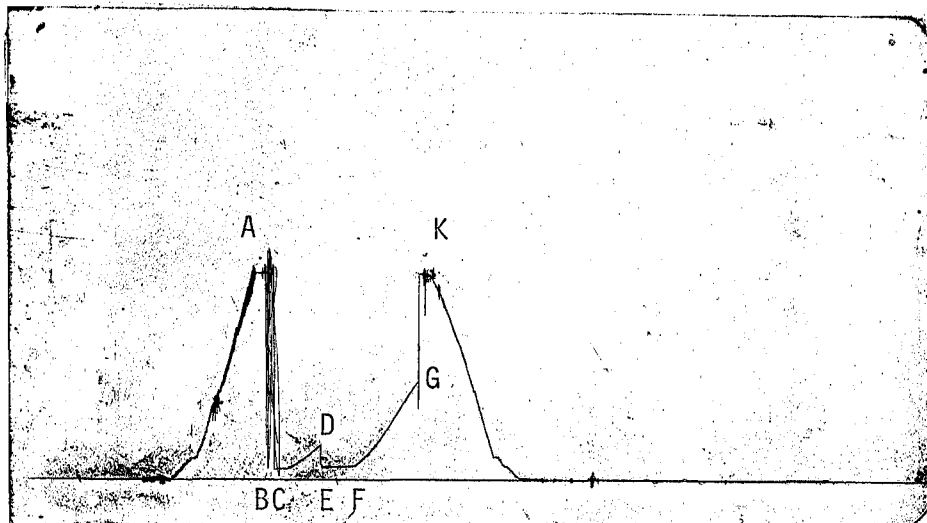
D)END 1st Shutin: 495.0

E)2nd Flow Start: 179.0

F)2nd Flow End : 192.0

G)END 2nd Shutin: 1388.0

Q)Final Hydro. : 2931.0



TEST TIMES(MIN)

1st FLOW : 28

SHUTIN: 60

2nd FLOW : 58

SHUTIN: 118

PRESSURE RECORDER NUMBER : 6021

DEPTH : 5528.00ft.

LOCATION : OUTSIDE

TYPE : DMR

CAPACITY : 10000.00psi

PRESSURE

psi

A)Initial Hydro : 2958.0

B)1st Flow Start: 138.0

C)1st Flow End : 203.0

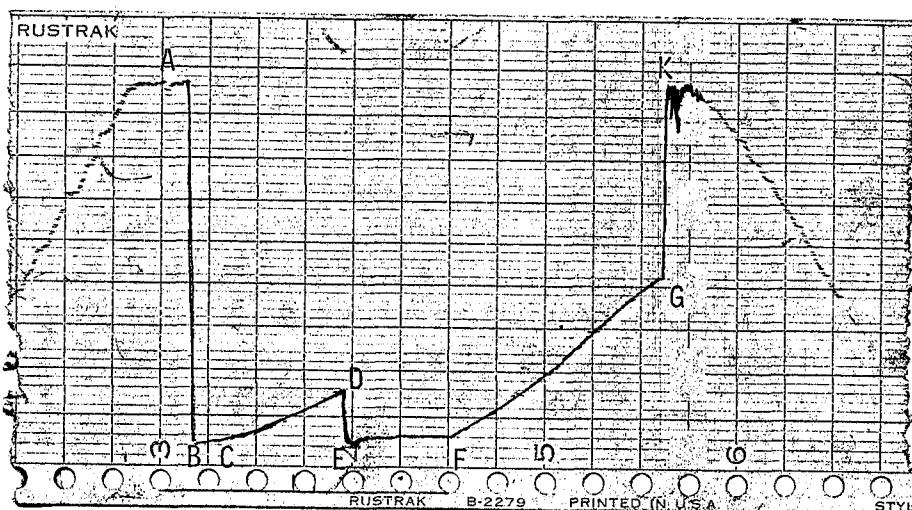
D)END 1st Shutin: 548.0

E)2nd Flow Start: 168.0

F)2nd Flow End : 233.0

G)END 2nd Shutin: 1438.0

Q)Final Hydro. : 2963.0



Contractor <u>Coleman</u>	Top Choke <u>1"</u>	Flow No. 1 <u>26</u> Min.
Rig No. <u>3</u>	Bottom Choke <u>3/4"</u>	Shut-in No. 1 <u>60</u> Min.
Spot <u>--</u>	Size Hole <u>7 7/8"</u>	Flow No. 2 <u>60</u> Min.
Sec. <u>35</u>	Size Rat Hole <u>--</u>	Shut-in No. 2 <u>132</u> Min.
Twp. <u>37S</u>	Size & Wt. D. P. <u>4 1/2" XH 16.60#</u>	Flow No. 3 <u>--</u> Min.
Rng. <u>25E</u>	Size Wt. Pipe <u>--</u>	Shut-in No. 3 <u>--</u> Min.
Field <u>--</u>	I. D. of D. C. <u>2 1/4"</u>	Bottom Hole Temp. <u>136° F</u>
County <u>San Juan</u>	Length of D. C. <u>714 ft</u>	Mud Weight <u>10.5</u>
State <u>Utah</u>	Total Depth <u>5785 ft</u>	Gravity <u>--</u>
Elevation <u>5470 ft</u>	Interval Tested <u>5756-5785 ft</u>	Viscosity <u>39+</u>
Formation <u>Desert Creek</u>	Type of Test <u>Bottom Hole Conventional</u>	

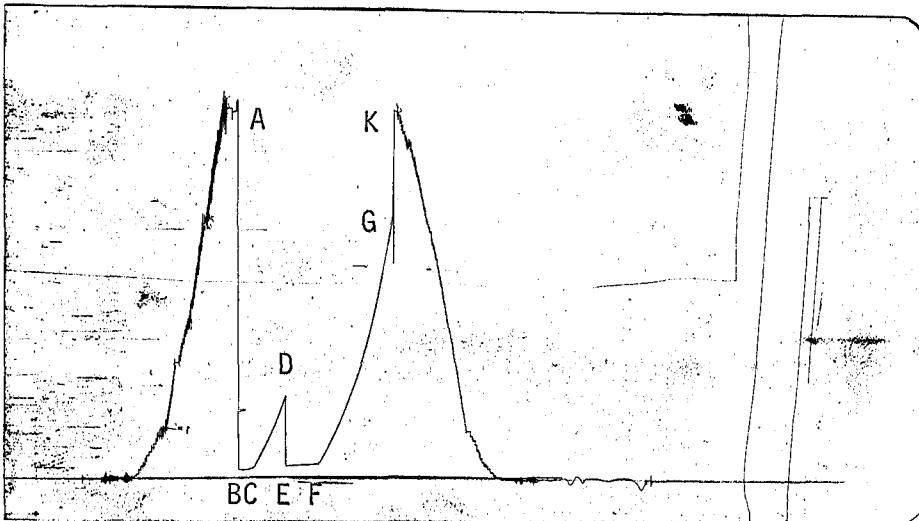
Tool opened @ 3:25 am

Inside Recorder

PRD Make Kuster K-3
No. 7653 Cap. 4000 @ 5736

Press		Corrected
Initial Hydrostatic	A	3254
Final Hydrostatic	K	3222
Initial Flow	B	92
Final Initial Flow	C	101
Initial Shut-in	D	728
Second Initial Flow	E	123
Second Final Flow	F	140
Second Shut-in	G	2305
Third Initial Flow	H	--
Third Final Flow	I	--
Third Shut-in	J	--

Lynes Dist. Cortez, CO
Our Tester: Bryan Scott
Witnessed By: Ralph Sloane



Did Well Flow - Gas No Oil No Water No

RECOVERY IN PIPE:

300 ft total fluid recovered = 1.47 bbls.
100 ft oil (condensate) = .49 bbl.
200 ft gas cut slight water cut drilling mud = .98 bbl.

Blow Description:

- 1st flow: Tool opened with a 1" blow increasing to 1.77 psi at the end of the flow.
- 2nd flow: Tool opened with a 3" blow increasing to 2.38 psi in 10 minutes, decreasing to 1.77 psi at the end of the flow.

Comments:

The test results indicate a mechanically successful test. The flow and shut-in curves suggest very low permeability within the zone tested.
DMR pressures recorded in PSIA.

Operator Wintershall Oil & Gas Corp.
Address 5675 DTC Blvd Suite 200
Englewood, CO 80111

Well Name and No. Nancy Cow Canyon #35-13
Ticket No. 00768

Date 8-13-85

DST No. 2
No. Final Copies 11

INTERSHALL OIL & GAS
 DST#: 2
 NANCY COW CANYON #35-13
 5756 - 5785ft.

Page 1

Location: 35-37S-25E
 Test Type: BOTTOM HOLE CONVENTIONAL
 Formation: DESERT CREEK

Recorder Number: 6021
 Recorder Depth: 5761 ft.

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	PRESSURE SQUARED psi ² /10 ⁶
A	INITIAL HYDROSTATIC	0.00		3243.0	
B	START OF 1st FLOW	0.00		77.0	
	1st FLOW PERIOD	0.00	0.0	78.0	
		2.00	10.0	88.0	
		4.00	10.0	88.0	
		6.00	10.0	88.0	
		8.00	20.0	98.0	
		10.00	15.0	93.0	
		12.00	20.0	98.0	
		16.00	25.0	103.0	
		18.00	25.0	103.0	
		20.00	25.0	103.0	
		22.00	30.0	108.0	
		24.00	30.0	108.0	
C	END OF 1st FLOW	26.00	30.0	108.0	
	1st SHUTIN PERIOD	0.00	0.0	108.0	0.0000
		2.00	20.0	128.0	14.0000
		6.00	60.0	168.0	5.3333
		8.00	75.0	183.0	4.2500
		10.00	95.0	203.0	3.6000
		12.00	115.0	223.0	3.1667
		14.00	135.0	243.0	2.8571
		16.00	150.0	258.0	2.6250
		18.00	170.0	278.0	2.4444
		22.00	210.0	318.0	2.1818
		24.00	230.0	338.0	2.0833
		26.00	250.0	358.0	2.0000
		28.00	270.0	378.0	1.9286
		30.00	290.0	398.0	1.8667
		32.00	310.0	418.0	1.8125
		34.00	330.0	438.0	1.7647
		38.00	375.0	483.0	1.6842
		40.00	400.0	508.0	1.6500
		42.00	425.0	533.0	1.6190
		44.00	450.0	558.0	1.5909
		48.00	475.0	583.0	1.5417

INTERSHALL OIL & GAS
DST#: 2
NANCY COW CANYON #35-13
5756 - 5785ft.

Page 2

Location: 35-37S-25E
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: DESERT CREEK

Recorder Number: 6021
Recorder Depth: 5761 ft.

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	ABSCISSA	PRESSURE SQUARED psi ² /10 ⁶
		50.00	500.0	608.0	1.5200	
		52.00	525.0	633.0	1.5000	
		56.00	575.0	683.0	1.4643	
		58.00	605.0	713.0	1.4483	
D	END OF 1st SHUTIN	60.00	635.0	743.0	1.4333	
E	START OF 2nd FLOW	0.00		108.0		
	2nd FLOW PERIOD	4.00	20.0	128.0		
		6.00	30.0	138.0		
		12.00	30.0	138.0		
		16.00	30.0	138.0		
		20.00	40.0	148.0		
		24.00	40.0	148.0		
		28.00	40.0	148.0		
		32.00	40.0	148.0		
		36.00	40.0	148.0		
		40.00	45.0	153.0		
		44.00	45.0	153.0		
		48.00	45.0	153.0		
		52.00	50.0	158.0		
		56.00	50.0	158.0		
F	END OF 2nd FLOW	60.00	60.0	168.0		
	2nd SHUTIN PERIOD	0.00	0.0	168.0	0.0000	
		2.00	15.0	183.0	44.0000	
		4.00	35.0	203.0	22.5000	
		6.00	55.0	223.0	15.3333	
		8.00	70.0	238.0	11.7500	
		10.00	90.0	258.0	9.6000	
		14.00	125.0	293.0	7.1429	
		16.00	145.0	313.0	6.3750	
		18.00	165.0	333.0	5.7778	
		20.00	185.0	353.0	5.3000	
		22.00	205.0	373.0	4.9091	
		24.00	225.0	393.0	4.5833	
		26.00	245.0	413.0	4.3077	
		30.00	285.0	453.0	3.8667	
		32.00	305.0	473.0	3.6875	

INTERSHALL OIL & GAS
 DST#: 2
 NANCY COW CANYON #35-13
 5756 - 5785ft.

Page 3

Location: 35-37S-25E
 Test Type: BOTTOM HOLE CONVENTIONAL
 Formation: DESERT CREEK

Recorder Number: 6021
 Recorder Depth: 5761 ft.

TIME-PRESSURE LISTING

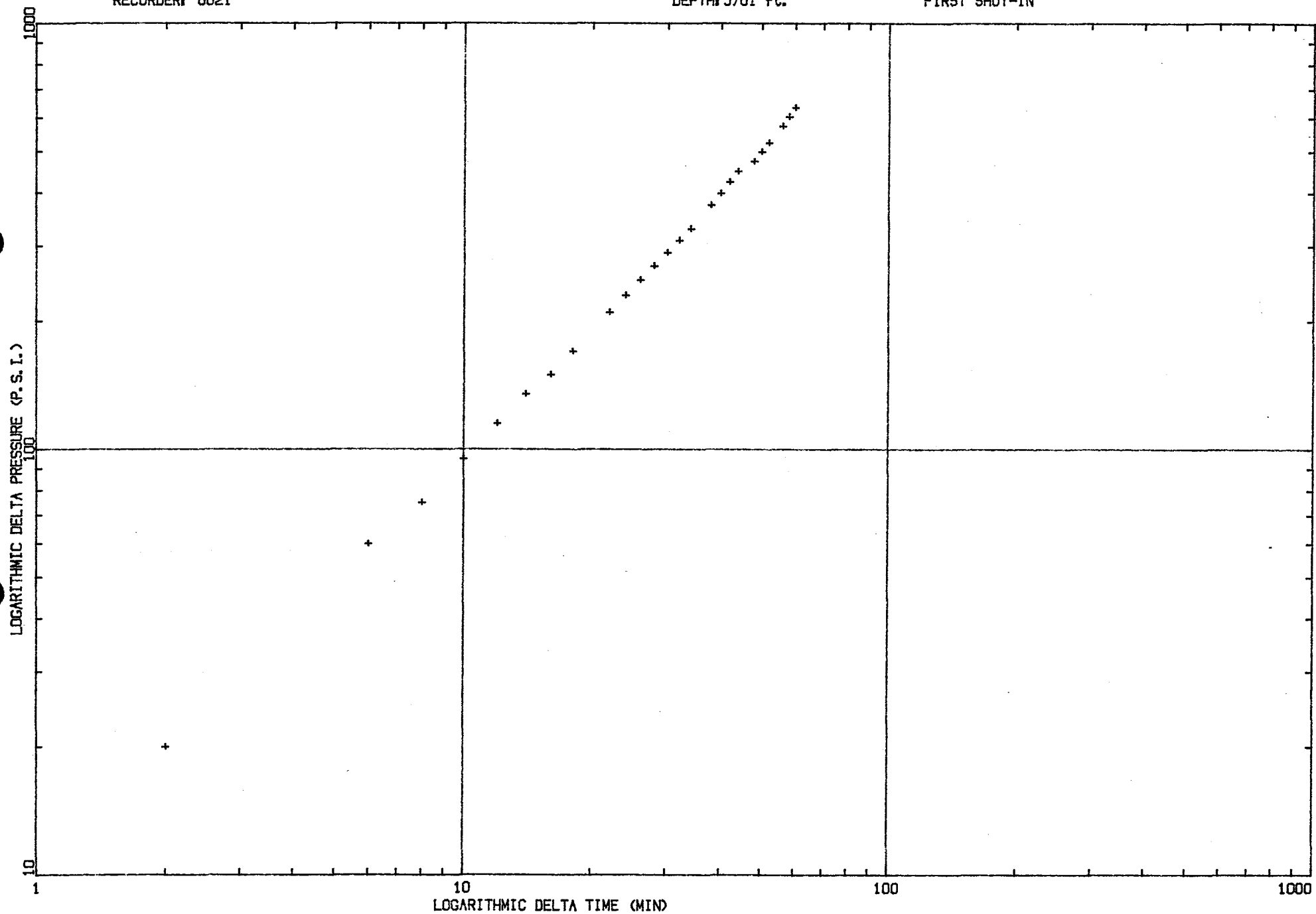
CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	ABSCISSA	PRESSURE SQUARED psi ² /10 ⁶
		34.00	325.0	493.0	3.5294	
		36.00	350.0	518.0	3.3889	
		40.00	395.0	563.0	3.1500	
		42.00	420.0	588.0	3.0476	
		46.00	465.0	633.0	2.8696	
		48.00	490.0	658.0	2.7917	
		50.00	515.0	683.0	2.7200	
		54.00	560.0	728.0	2.5926	
		58.00	610.0	778.0	2.4828	
		62.00	665.0	833.0	2.3871	
		66.00	715.0	883.0	2.3030	
		70.00	775.0	943.0	2.2286	
		74.00	835.0	1003.0	2.1622	
		78.00	895.0	1063.0	2.1026	
		82.00	960.0	1128.0	2.0488	
		86.00	1035.0	1203.0	2.0000	
		90.00	1110.0	1278.0	1.9556	
		94.00	1190.0	1358.0	1.9149	
		98.00	1275.0	1443.0	1.8776	
		102.00	1365.0	1533.0	1.8431	
		106.00	1460.0	1628.0	1.8113	
		110.00	1565.0	1733.0	1.7818	
		114.00	1665.0	1833.0	1.7544	
		118.00	1775.0	1943.0	1.7288	
		122.00	1880.0	2048.0	1.7049	
		126.00	1985.0	2153.0	1.6825	
		130.00	2090.0	2258.0	1.6615	
G	END OF 2nd SHUTIN	132.00	2140.0	2308.0	1.6515	
Q	FINAL HYDROSTATIC	0.00		3213.0		

* VALUES USED FOR EXTRAPOLATIONS

OPERATOR: WINTERSHALL OIL & GAS
LOCATION: 95-37S-25E
RECORDER: 8021

WELL NAME: NANCY COW CANYON #95-13
DST #: 2
DEPTH: 5761 ft.

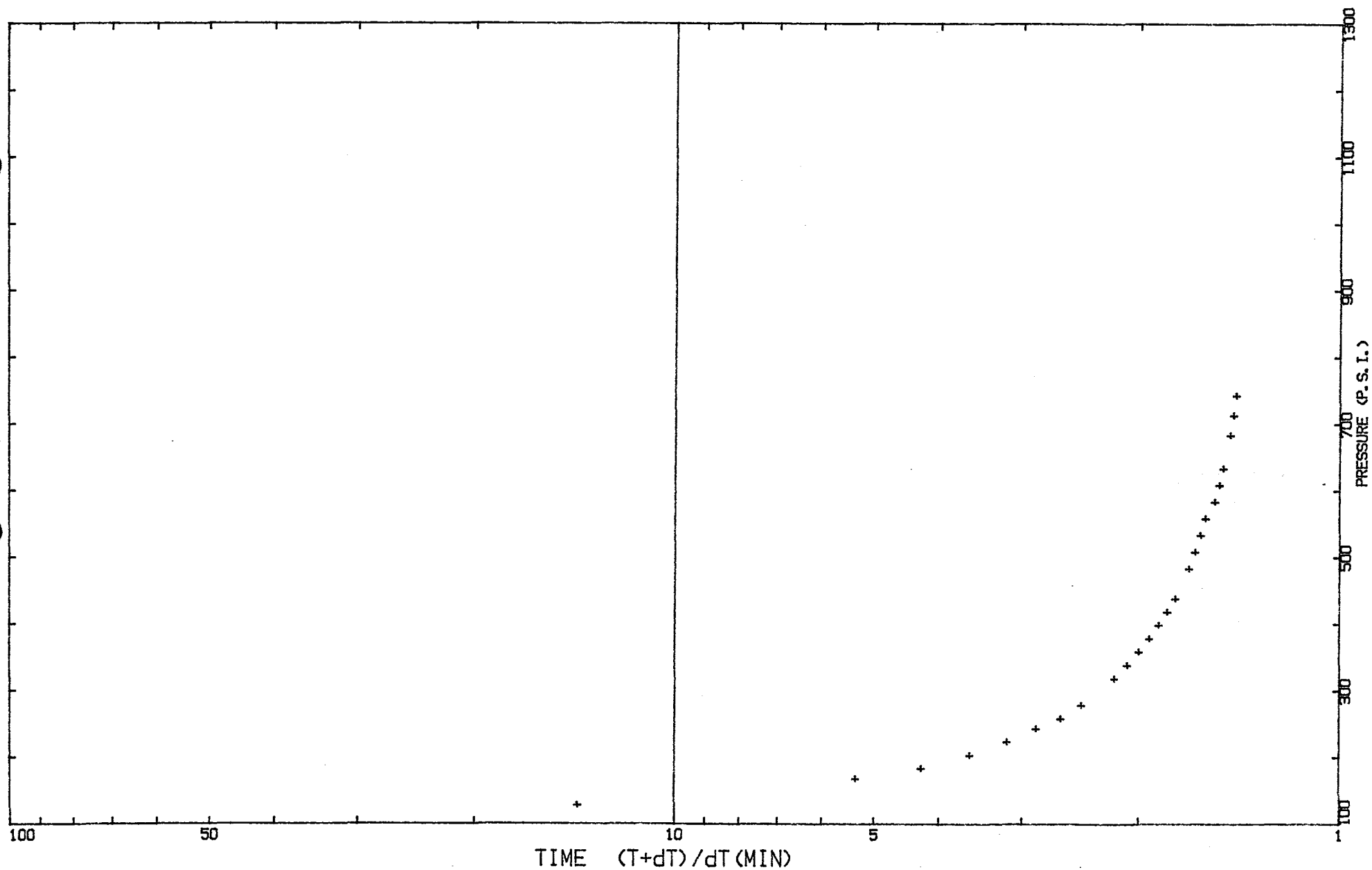
FIRST SHUT-IN



OPERATOR: WINTERSHALL OIL & GAS
WELL NAME: NANCY COW CANYON #35-13
LOCATION: 35-37S-25E
FIRST SHUT-IN
RECORDER: 6021

DST #: 2

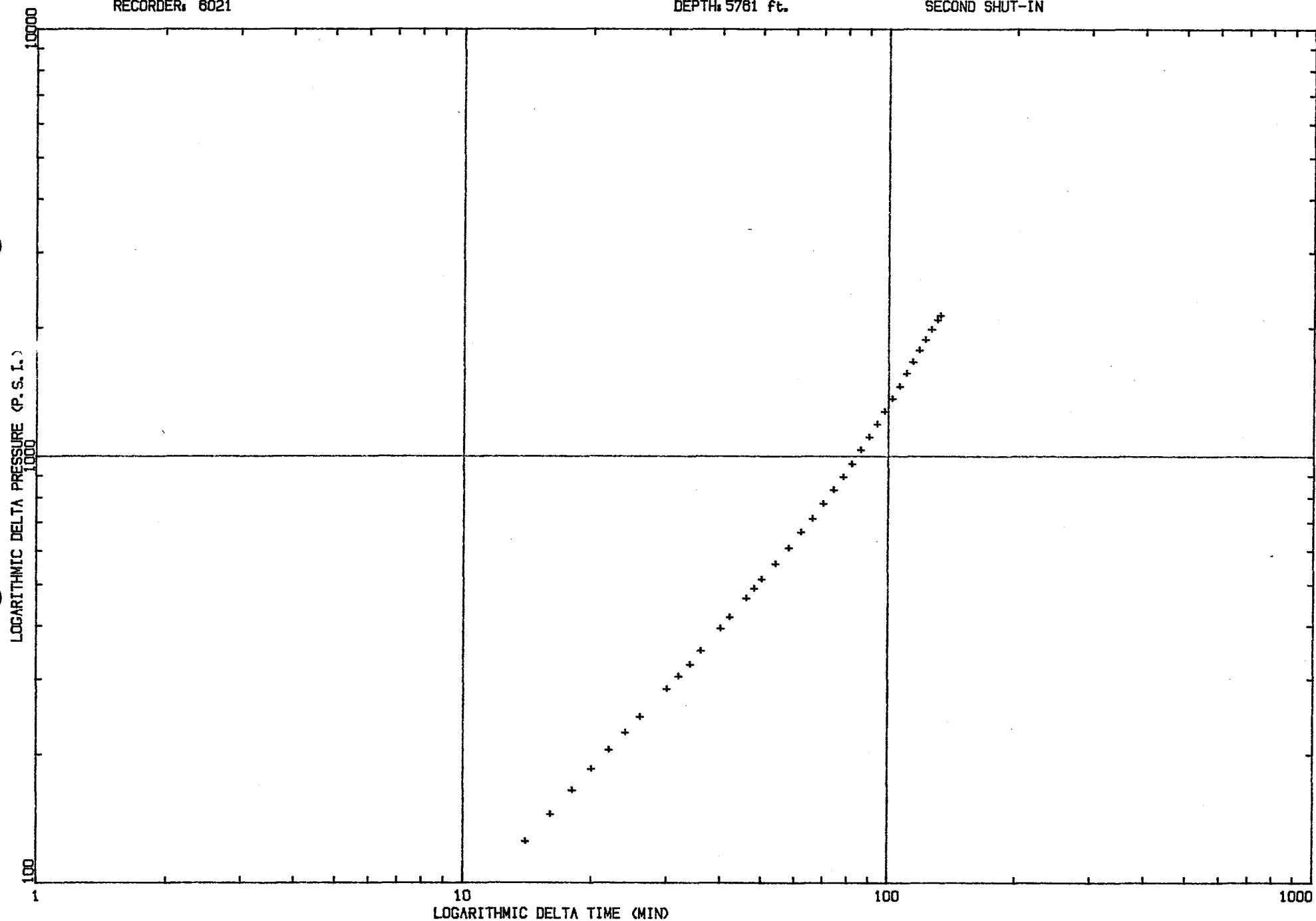
DEPTH: 5761 ft.



OPERATOR: WINTERSHALL OIL & GAS
LOCATION: 95-97S-25E
RECORDER: 8021

WELL NAME: NANCY COW CANYON #35-19
DST #: 2
DEPTH: 5781 ft.

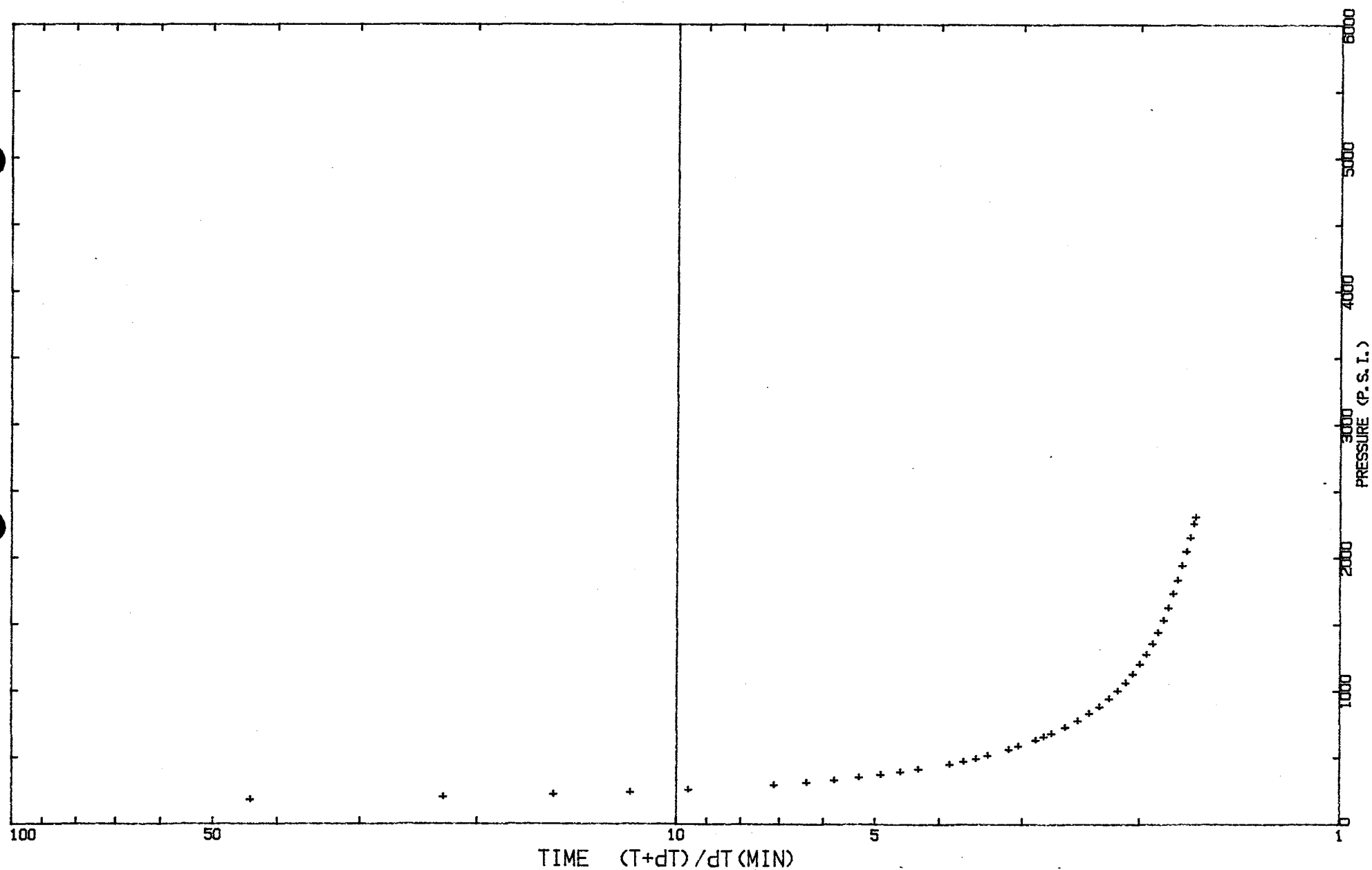
SECOND SHUT-IN



OPERATOR: WINTERSHALL OIL & GAS
WELL NAME: NANCY COW CANYON #35-13
LOCATION: 35-37S-25E
SECOND SHUT-IN
RECORDER: 6021

DST #: 2

DEPTH: 5761 ft.



WINTERSHALL OIL & GAS CORP
DST#: 2
NANCY COW CANYON #35-13
5756 - 5785ft.

Page 1

Location: 35-37S-25E
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: DESERT CREEK

Recorder Number: 6021
Recorder Depth: 5761

SAMPLE DATA

SAMPLE CHAMBER:

Capacity of sample chamber	2250	cc
Volume of sample.....	2150	cc
Pressure in sampler.....	100	psig
Where sampler was drained...	on location	

Sampler contained:

Oil	650	cc	46 @ 68 Degrees F
Mud	1500	cc	
Gas	.03	cu-ft	
GOR	7.38		

RESISTIVITY DATA:

Top.....	TRACE OF OIL
Middle.....	TRACE OF OIL
Bottom.....	TRACE OF OIL
Sampler.....	
Mud pit.....	900 PPM NACL
Make-up Water...	



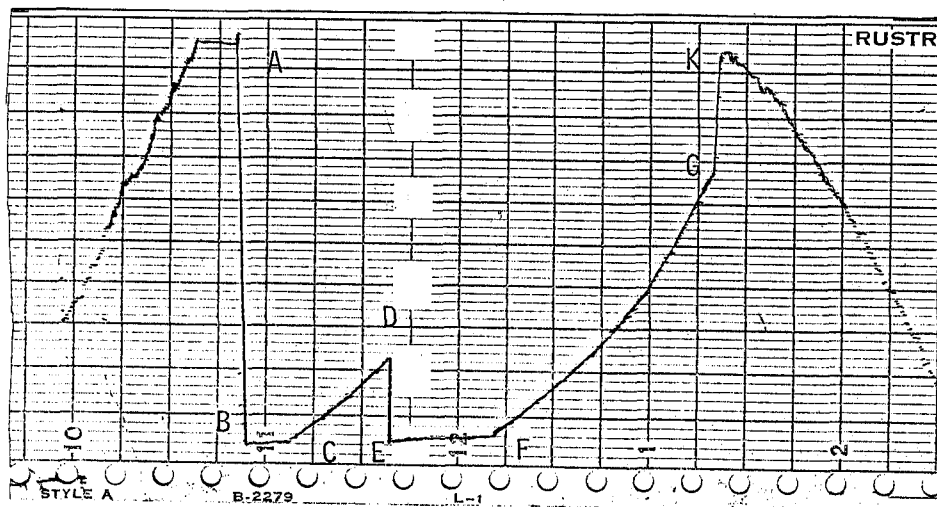
LYNES INC.

DMR-312 DIGITAL MEMORY RECORDER NO. 6021 CAP 10000 AT 5761OPERATOR Wintershall Oil & Gas WELL NAME Nancy Cow Canyon #35-13 TICKET NO. 00768 DST. NO. 2

03:11:00 T 128.437	05:35:00 T 132.687	07:59:00 T 134.812
3247.50	152.500	2152.50
3237.50	152.500	2207.50
3242.50	152.500	2257.50
3242.50	152.500	2307.50
Initial Hydro. 3242.50	152.500	End 2nd shut-in 3182.50
3322.50	157.500	Final Hydro. 3212.50
282.500	157.500	3207.50
03:27:00 T 129.812	05:51:00 T 133.187	08:15:00 T 135.187
Start 1st flow -77.5000	157.500	3162.50
37.5000	End 2nd flow -167.500	3177.50
37.5000	182.500	3107.50
37.5000	202.500	3127.50
97.5000	222.500	3082.50
92.5000	237.500	3037.50
97.5000	257.500	3032.50
03:43:00 T 130.562	06:07:00 T 133.437	08:31:00 T 133.812
102.500	292.500	2942.50
102.500	312.500	2927.50
102.500	332.500	
107.500	352.500	
107.500	372.500	
End 1st flow -107.500	392.500	
127.500	412.500	
03:59:00 T 131.562	06:23:00 T 133.812	
167.500	452.500	
182.500	472.500	
202.500	492.500	
222.500	517.500	
242.500	537.500	
257.500	562.500	
277.500	587.500	
04:15:00 T 132.187	06:39:00 T 134.062	
317.500	632.500	
337.500	657.500	
357.500	682.500	
377.500	702.500	
397.500	727.500	
417.500	757.500	
437.500	777.500	
04:31:00 T 132.687	06:55:00 T 134.187	
482.500	832.500	
507.500	857.500	
532.500	882.500	
557.500	912.500	
582.500	942.500	
607.500	972.500	
632.500	1002.50	
04:47:00 T 133.062	07:11:00 T 134.312	
682.500	1062.50	
712.500	1097.50	
End 1st shut-in -742.500	1127.50	
Start 2nd flow -107.500	1162.50	
117.500	1202.50	
127.500	1237.50	
137.500	1277.50	
05:03:00 T 131.562	07:27:00 T 134.562	
142.500	1357.50	
137.500	1397.50	
142.500	1442.50	
137.500	1487.50	
142.500	1532.50	
142.500	1582.50	
142.500	1627.50	
05:19:00 T 132.062	07:43:00 T 134.687	
142.500	1732.50	
147.500	1782.50	
147.500	1832.50	
147.500	1887.50	
147.500	1942.50	
147.500	1997.50	
147.500	2047.50	

PRESSURE RECORDER NUMBER : 6021

DEPTH : 5761.00ft. LOCATION : OUTSIDE
TYPE : DMR CAPACITY : 10000.00psi



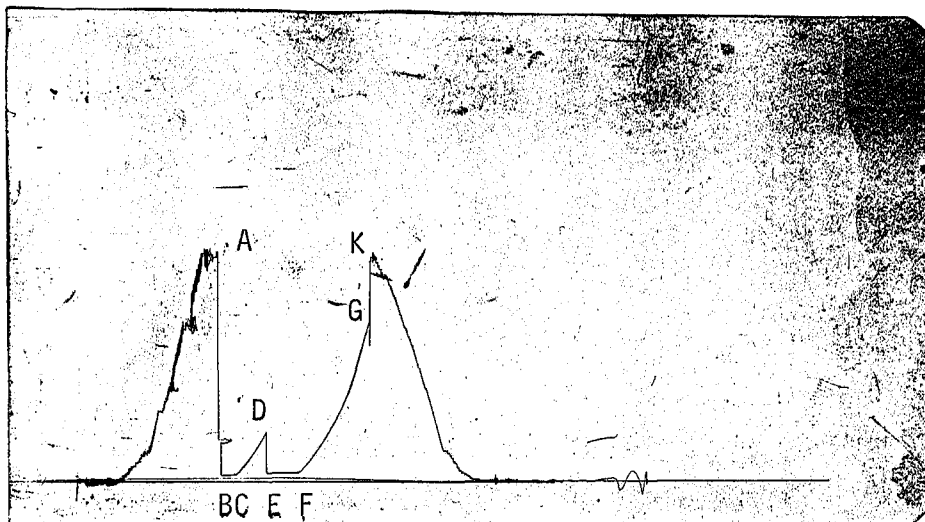
PRESSURE
psi

A)Initial Hydro : 3243.0
B)1st Flow Start: 77.0
C)1st Flow End : 108.0
D)END 1st Shutin: 743.0
E)2nd Flow Start: 108.0
F)2nd Flow End : 168.0
G)END 2nd Shutin: 2308.0
Q)Final Hydro. : 3213.0

TEST TIMES(MIN)
1st FLOW : 26
SHUTIN: 60
2nd FLOW : 60
SHUTIN: 132

PRESSURE RECORDER NUMBER : 24552

DEPTH : 5741.00ft. LOCATION : INSIDE
TYPE : K-3 CAPACITY : 6625.00psi



PRESSURE
psi

A)Initial Hydro : 3259.0
B)1st Flow Start: 104.0
C)1st Flow End : 110.0
D)END 1st Shutin: 703.0
E)2nd Flow Start: 129.0
F)2nd Flow End : 143.0
G)END 2nd Shutin: 2277.0
Q)Final Hydro. : 3209.0

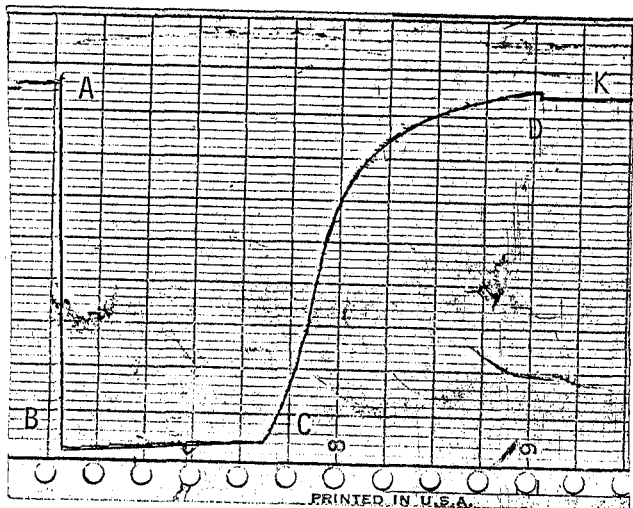
Contractor <u>Coleman</u>	Top Choke <u>1/4"</u>	Flow No. 1 <u>120</u> Min.
Rig No. <u>3</u>	Bottom Choke <u>3/4"</u>	Shut-in No. 1 <u>162</u> Min.
Spot <u>--</u>	Size Hole <u>7 7/8"</u>	Flow No. 2 <u>--</u> Min.
Sec. <u>35</u>	Size Rat Hole <u>--</u>	Shut-in No. 2 <u>--</u> Min.
Twp. <u>37S</u>	Size & Wt. D. P. <u>4 1/2" XH 16.60#</u>	Flow No. 3 <u>--</u> Min.
Rng. <u>25F</u>	Size Wt. Pipe <u>--</u>	Shut-in No. 3 <u>--</u> Min.
Field <u>--</u>	I. D. of D. C. <u>2 1/4"</u>	
County <u>San Juan</u>	Length of D. C. <u>715 ft</u>	Bottom
State <u>Utah</u>	Total Depth <u>5854 ft</u>	Hole Temp. <u>135° F</u>
Elevation <u>5470 ft</u>	Interval Tested <u>5769-5787 ft</u>	Mud Weight <u>10.5</u>
Formation <u>Desert Creek</u>	Type of Test <u>Inflate</u>	Gravity <u>--</u>
	<u>Straddle</u>	Viscosity <u>43</u>

Tool opened @ 3:15 pm

Inside Recorder

PRD Make <u>DMR</u>		
No: <u>6021</u> Cap. <u>10000</u> @ <u>5774'</u>		
<u>Press</u>		
	<u>Corrected</u>	
Initial Hydrostatic	A	3363
Final Hydrostatic	K	3273
Initial Flow	B	38
Final Initial Flow	C	123
Initial Shut-in	D	3223
Second Initial Flow	E	--
Second Final Flow	F	--
Second Shut-in	G	--
Third Initial Flow	H	--
Third Final Flow	I	--
Third Shut-in	J	--

Lynes Dist. Cortez, CO
Our Tester: Bryan Scott
Witnessed By: Ralph Sloane



Did Well Flow - Gas No Oil No Water No

RECOVERY IN PIPE:

235 ft total fluid recovered	= 1.13 bbls.
10 ft free oil	= .04 bbl.
108 ft oil and gas cut drilling mud	= .52 bbl.
117 ft mud cut water	= .57 bbl.

Blow Description:

1st flow: Tool opened with a 8" blow increasing to 51" in 80 minutes, decreasing to 43" blow at the end of the flow.

Comments:

The test results indicate a mechanically successful test. Reservoir calculations are enclosed. DMR pressures recorded in PSIA. The shut-in was valid up until 162 minutes the final shut-in pressure was read at this point.

Operator Wintershall Oil & Gas
Address 5675 DTC Blvd Suite 200
Englewood, CO 80111

Well Name and No. Nancy Cow Canyon #35-13
Ticket No. 00769

Date 8-15-85
DST No. 3
No. Final Copies 11

LYNES, INC.

Wintershall Oil & Gas

Nancy Cow Canyon #35-13

3

Operator

Well Name and No.

DST No.

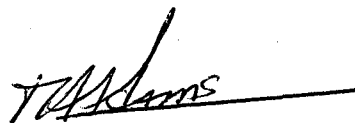
Comments relative to DST #3 run on Nancy Cow Canyon #35-13 in San Juan County, Utah, 35-37S-25E for Wintershall Oil & Gas.

The enclosed calculations were performed by plotting the time pressure data on a semi-log scale and using the resultant slopes and extrapolated pressures in the appropriate fluid calculations. The shut-in curve was extrapolated, although it did not reach the Horner straight line, to a pressure of 3714.82 psi. This extrapolated pressure is equal to a sub-surface pressure gradient of 0.643 psi/ft at the recorder depth of 5774 ft.

The test results and calculations indicate a zone of low permeability with no indications of well bore damage.

Please note that these results should be used as indicators only as all of the parameters used have been estimated.

If you should have any questions concerning this test or data please call.



T.H. Adams, C.E.T.
Manager Technical Services

THA/nn

Operator.....: WINTERSHALL OIL & GAS
Well ID.....: NANCY COW CANYON #35-13
Location.....: 35-37S-25E
DST Number.....: 3
Formation.....: DESERT CREEK
Type of test....: INFLATE STRADDLE
Test interval...: 5769 - 5787ft.
Recorder number : 6021
Recorder depth : 5774

RESERVOIR CALCULATIONS: Fluid calculations based on 1st shut-in

RESERVOIR PARAMETERS USED:

Net Pay.....:	10.00 ft
Porosity.....:	10.00 %
Bottom Hole Temp.....:	135.00 F
Specific Gravity.....:	.820
API Gravity.....:	39.00
Compressibility.....:	.5000E-005 /psi
Viscosity.....:	.65 cp
Total Recovery.....:	235.00 ft
Total flowing time.....:	120.00 minutes
Flow rate.....:	13.00 bbl/d
Final flowing pressure:	123.00 psi
Slope.....:	1627.968 psi/cycle
Extrapolation.....:	3714.82 psi
Formation vol. factor :	1.25 Reservoir/Surface
Wellbore radius.....:	3.94 in

RESULTS:

Effective Permeability...(k)....:	.11 mD
Transmissibility.....(kh/u)....:	1.62 mD.ft/cp
Flow capacity.....(kh)....:	1.05 mD.ft
Skin.....(s)....:	-1.55
Pressure drop across skin.....:	-2192.52 psi
Radius of investigation.....:	23.37 ft
Damage ratio.....:	.62
Productivity index.....:	.004 bbl/psi.d
Productivity index W/O damage :	.004 bbl/psi.d

INTERSHALL OIL & GAS
DST#: 3
NANCY COW CANYON #35-13
5769 - 5787ft.

Page 1

Location: 35-37S-25E
Test Type: INFLATE STRADDLE
Formation: DESERT CREEK

Recorder Number: 6021
Recorder Depth: 5774 ft.

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	PRESSURE SQUARED psi^2/10^6
A	INITIAL HYDROSTATIC	0.00		3363.0	
B	START OF 1st FLOW	0.00		38.0	
	1st FLOW PERIOD	10.00	10.0	48.0	
		20.00	20.0	58.0	
		30.00	30.0	68.0	
		40.00	35.0	73.0	
		50.00	45.0	83.0	
		60.00	50.0	88.0	
		70.00	55.0	93.0	
		80.00	60.0	98.0	
		90.00	65.0	103.0	
		100.00	70.0	108.0	
		110.00	80.0	118.0	
C	END OF 1st FLOW	120.00	85.0	123.0	
	1st SHUTIN PERIOD	0.00	0.0	123.0	0.0000
		2.00	45.0	168.0	61.0000
		4.00	105.0	228.0	31.0000
		6.00	160.0	283.0	21.0000
		8.00	220.0	343.0	16.0000
		12.00	360.0	483.0	11.0000
		14.00	445.0	568.0	9.5714
		16.00	535.0	658.0	8.5000
		18.00	630.0	753.0	7.6667
		20.00	740.0	863.0	7.0000
		22.00	860.0	983.0	6.4545
		24.00	995.0	1118.0	6.0000
		28.00	1280.0	1403.0	5.2857
		30.00	1425.0	1548.0	5.0000
		32.00	1575.0	1698.0	4.7500
		34.00	1710.0	1833.0	4.5294
		36.00	1830.0	1953.0	4.3333
		38.00	1940.0	2063.0	4.1579
		40.00	2035.0	2158.0	4.0000
		44.00	2200.0	2323.0	3.7273
		46.00	2265.0	2388.0	3.6087
		48.00	2325.0	2448.0	3.5000

INTERSHALL OIL & GAS
DST#: 3
NANCY COW CANYON #35-13
5769 - 5787ft.

Page 2

Location: 35-37S-25E
Test Type: INFLATE STRADDLE
Formation: DESERT CREEK

Recorder Number: 6021
Recorder Depth: 5774 ft.

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P psi	PRESSURE (T+dt)/dt psi	ABSCISSA PRESSURE SQUARED psi ² /10 ⁶
		50.00	2385.0	2508.0	3.4000
		52.00	2435.0	2558.0	3.3077
		54.00	2480.0	2603.0	3.2222
		56.00	2520.0	2643.0	3.1429
		60.00	2595.0	2718.0	3.0000
		64.00	2660.0	2783.0	2.8750
		68.00	2715.0	2838.0	2.7647
		72.00	2760.0	2883.0	2.6667
		76.00	2805.0	2928.0	2.5789
		80.00	2845.0	2968.0	2.5000
		84.00	2880.0	3003.0	2.4286
		88.00	2910.0	3033.0	2.3636
		92.00	2935.0	3058.0	2.3043
		96.00	2965.0	3088.0	2.2500
		100.00	2985.0	3108.0	2.2000
		104.00	3010.0	3133.0	2.1538
		108.00	3030.0	3153.0	2.1111
		112.00	3045.0	3168.0	2.0714
		116.00	3065.0	3188.0	2.0345
		120.00	3080.0	3203.0	2.0000
		124.00	3095.0	3218.0	1.9677
		128.00	3110.0	3233.0	1.9375
		132.00	3125.0	3248.0	1.9091
		136.00	3135.0	3258.0	1.8824
		140.00	3150.0	3273.0	1.8571
		144.00	3160.0	3283.0	1.8333
		148.00	3170.0	3293.0	1.8108
		152.00	3180.0	3303.0	1.7895*
		156.00	3190.0	3313.0	1.7692*
		160.00	3195.0	3318.0	1.7500*
D	END OF 1st SHUTIN	162.00	3200.0	3323.0	1.7407*
Q	FINAL HYDROSTATIC	0.00		3273.0	

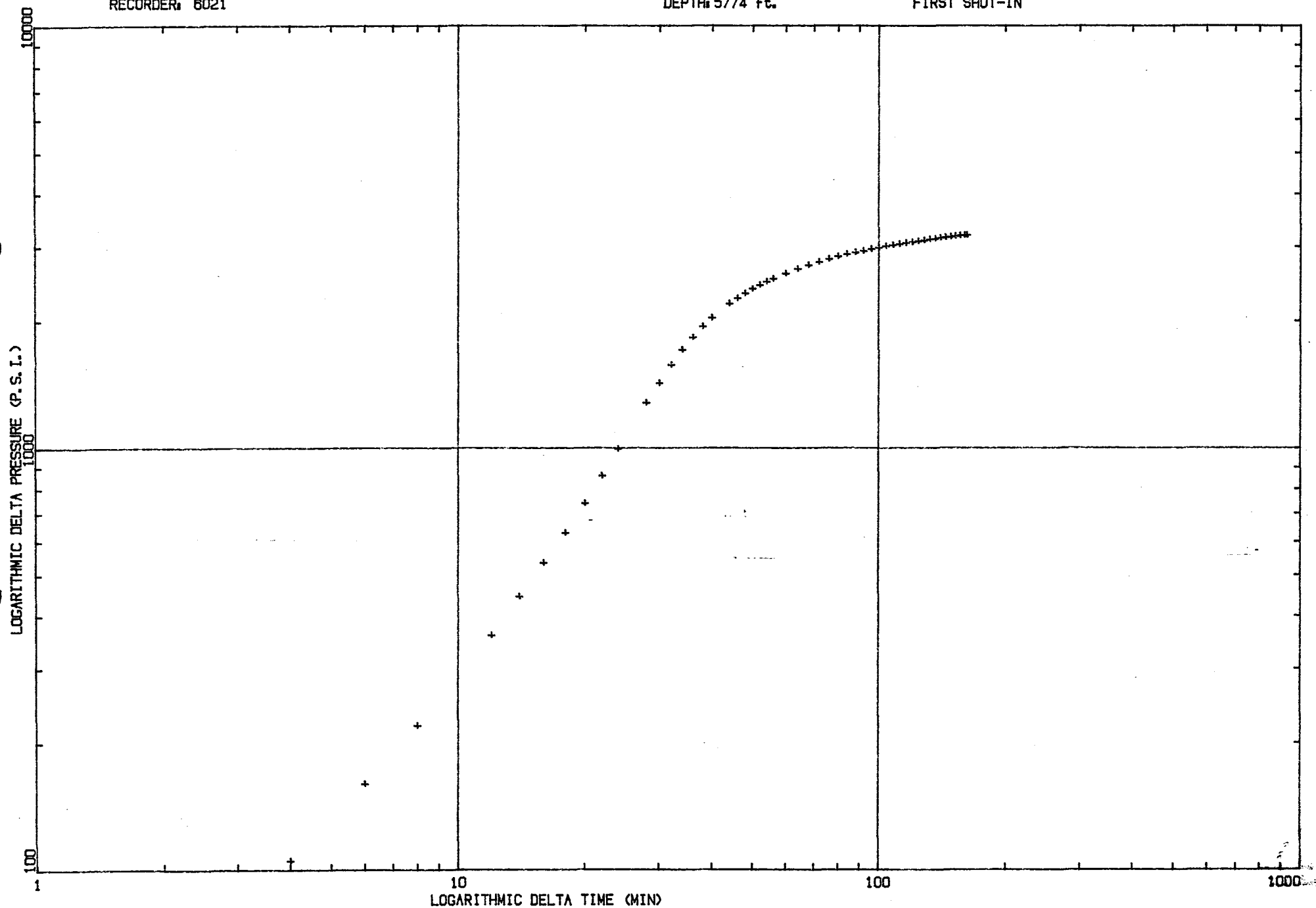
* VALUES USED FOR EXTRAPOLATIONS

1st SHUT-IN:
HORNER EXTRAPOLATION 3714.82 PSI
HORNER SLOPE 1627.97 psi/cycle

OPERATOR: WINTERSHALL OIL & GAS
LOCATION: 95-97S-25E
RECORDER: 8021

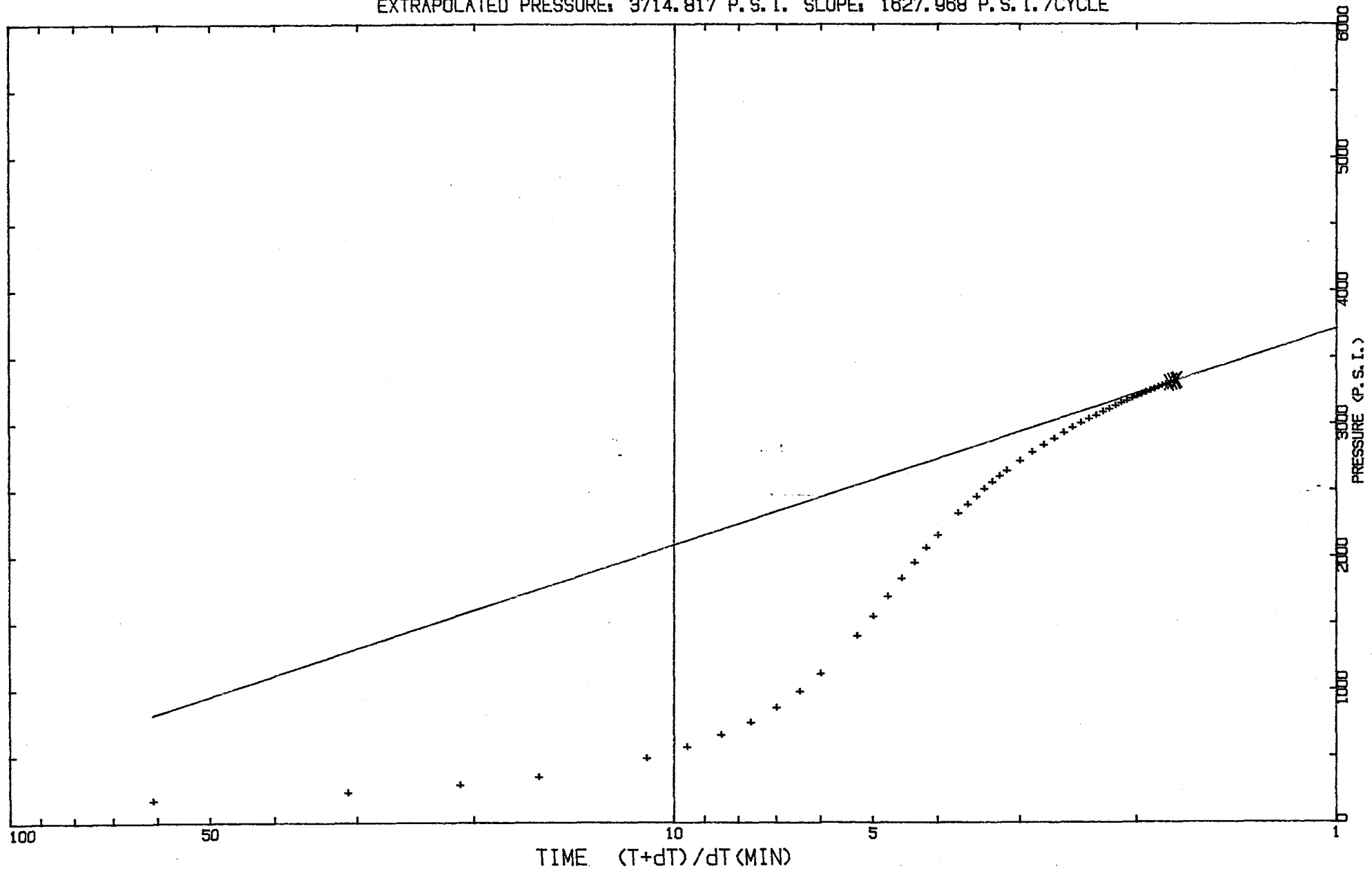
WELL NAME: NANCY COW CANYON #95-13
DST #: 3
DEPTH: 5774 ft.

FIRST SHUT-IN



DEPTH: 5774 ft.

EXTRAPOLATED PRESSURE: 3714.817 P.S.I. SLOPE: 1627.968 P.S.I./CYCLE



ST#: 3
NANCY COW CANYON #35-13
5769 - 5787ft.

Location: 35-37S-25E
Test Type: INFLATE STRADDLE
Formation: DESERT CREEK

Recorder Number: 6021
Recorder Depth: 5774

SAMPLE DATA

SAMPLE CHAMBER:

Capacity of sample chamber	2300	cc
Volume of sample.....	1900	cc
Pressure in sampler.....	75	psig
Where sampler was drained...	at shop	

Sampler contained:

Oil	100	cc	39 @ 68 Degrees F
Water	1000	cc	
Mud	800	cc	
Gas	.41	cu-ft	
GOR	656		

RESISTIVITY DATA:

Top.....	TRACE OF OIL
Middle.....	TRACE OF OIL
Bottom.....	4800 PPM NACL
Sampler.....	6500 PPM NACL
Mud pit.....	1750 PPM NACL
Make-up Water...	

DMR-312 DIGITAL MEMORY RECORDER NO. 6021 CAP 10000 AT 5774

OPERATOR Wintershall Oil & Gas WELL NAME Nancy Cow Canyon #35-13 TICKET NO. 00769 DST. NO. 3

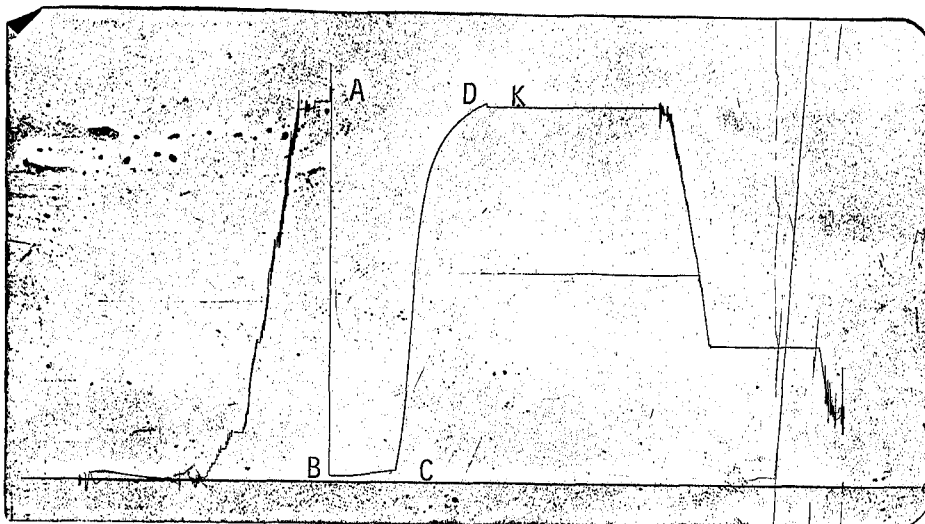
*****		17:10:00 T 134.437	19:34:00 T 135.187
DMR TYPE #2		117.500	3272.50
SKIP = 7.00000		117.500	3277.50
BIAS = 11:09:00			3282.50
TEMP. IN DEG. F		End 1st flow -122.500	3287.50
PRES. IN P.S.I.		-167.500	3292.50
*****		227.500	3297.50
15:02:00 T 132.062		282.500	3302.50
3322.50		342.500	
3347.50	17:26:00 T 134.312		19:50:00 T 135.187
3337.50	482.500		3312.50
3297.50	567.500		3317.50
3327.50	657.500		3317.50
Initial Hydro. -3362.50	752.500	End 1st shut-in	3322.50
Start 1st flow 37.5000	862.500		3262.50
	982.500		3262.50
15:18:00 T 132.187	1117.50		3262.50
37.5000	17:42:00 T 134.437	20:06:00 T 135.312	
37.5000	1402.50		3262.50
42.5000	1547.50		3262.50
47.5000	1697.50		3262.50
47.5000	1832.50		3262.50
52.5000	1952.50		3262.50
52.5000	2062.50		3262.50
15:34:00 T 132.312	2157.50		3267.50
57.5000	17:58:00 T 134.687	20:22:00 T 135.312	
57.5000	2322.50	Final Hydro.	3272.50
62.5000	2387.50		3272.50
62.5000	2447.50		3272.50
62.5000	2507.50		3272.50
67.5000	2557.50		3272.50
67.5000	2602.50		3272.50
15:50:00 T 133.062	2642.50		3277.50
72.5000	18:14:00 T 134.937		
72.5000	2717.50		
72.5000	2752.50		
77.5000	2782.50		
77.5000	2807.50		
77.5000	2837.50		
77.5000	2862.50		
16:06:00 T 133.687	2882.50		
82.5000	18:30:00 T 135.062		
82.5000	2927.50		
82.5000	2947.50		
82.5000	2967.50		
87.5000	2982.50		
87.5000	3002.50		
87.5000	3017.50		
16:22:00 T 134.062	3032.50		
92.5000	18:46:00 T 135.187		
92.5000	3057.50		
92.5000	3072.50		
92.5000	3087.50		
97.5000	3097.50		
97.5000	3107.50		
97.5000	3117.50		
16:38:00 T 134.312	3132.50		
102.500	19:02:00 T 135.187		
102.500	3152.50		
102.500	3162.50		
102.500	3167.50		
107.500	3177.50		
107.500	3187.50		
107.500	3197.50		
16:54:00 T 134.437	3202.50		
107.500	19:18:00 T 135.187		
112.500	3217.50		
112.500	3227.50		
112.500	3232.50		
112.500	3242.50		
117.500	3247.50		
117.500	3252.50		
	3257.50		

PRESSURE RECORDER NUMBER : 7653

DEPTH : 5774.00ft. LOCATION : INSIDE
TYPE : K-3 CAPACITY : 4000.00psi

PRESSURE
psi

A)Initial Hydro : 3326.0
B)1st Flow Start: 59.0
C)1st Flow End : 103.0
D)END 1st Shutin: 3309.0
Q)Final Hydro. : 3278.0



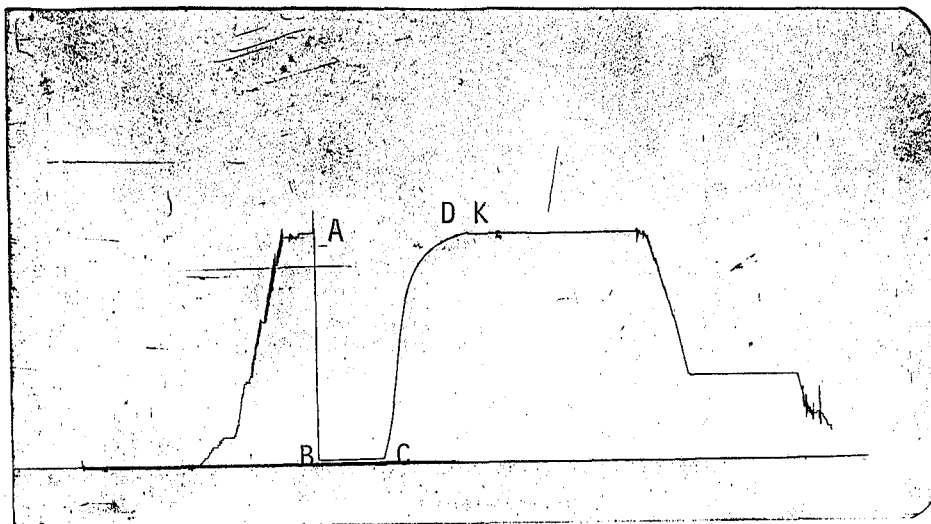
TEST TIMES(MIN)
1st FLOW : 26
SHUTIN: 60
2nd FLOW : 60
SHUTIN: 132

PRESSURE RECORDER NUMBER : 24552

DEPTH : 5774.00ft. LOCATION : INSIDE
TYPE : K-3 CAPACITY : 6625.00psi

PRESSURE
psi

A)Initial Hydro : 3322.0
B)1st Flow Start: 82.0
C)1st Flow End : 91.0
D)END 1st Shutin: 3298.0
Q)Final Hydro. : 3281.0



IGT

WINTERSHALL OIL & GAS CORP.
NANCY FEDERAL 35-13 COW CANYON
SEC. 35, T37S-R25E
SAN JUAN COUNTY, UTAH

IGT
INTERMOUNTAIN GEO-TECH, INC.
P. O. BOX 158
DELTA, CO 81416
303-874-7762

WINTERSHALL OIL & GAS CORP.
NANCY FEDERAL 35-13 COW CANYON
SEC. 35, T37S-R25E
SAN JUAN COUNTY, UTAH

August 16, 1985

The Wintershall, Nancy Federal #35-13 Cow Canyon well was spudded on 7/26/85. 13 3/8" casing was set at 74' and 9 5/8" casing was set at 1305'.

IGT Unit #3 was on location, rigged up and logging on 8/3/85 at a depth of 3850'. Drilling went smoothly averaging 325' per day until 8/7/85. Early in the morning a trip was made for bit #8 and drilling resumed without incident. Later that evening pump pressure was lost and another trip was made for a hole in the drill pipe. Two drill collars were laid down and the bit was found to have 10 buttons missing and a tight cone, so it was replaced with bit #9. Drilling resumed and continued until 8/9/85 when the rig was down for about an hour to replace the rotary chain. Drilling resumed and core point was reached the morning of 8/10/85.

1 60' core was cut in 7 1/4 hours in the Upper Ismay formation from a depth of 5551' to 5611'. 57' of core was recovered. Drill Stem Test #1 was run immediately following on 8/11/85. Drilling resumed that evening and continued until 8/12/85 when the Lower Desert Creek formation was encountered at 5776'. Porosity was drilled to depth of 5785' and Drill Stem Test #2 was run on 8/13/85.

Drilling resumed following the test and 69' was cut to reach total depth at the top of the Paradox Evaporites at 5854'. Electric logs were attempted early in the morning of 8/14/85 but a bridge was encountered and the pipe was tripped back in the hole. Electric logs were attempted a second time and another budge was encountered. The drill pipe was tripped back into the hole and the drilling fluid was circulated for a while to clean up the hole before attempting to run Electric logs a third time. IGT Unit #3 was released at this time. Electric logs were run on 8/14/85.

Jan A. Johnson
Geologist - IGT

WINTERSHALL OIL & GAS CORP.
NANCY FEDERAL 35-13 COW CANYON
SEC. 35, T37S-R25E
SAN JUAN COUNTY, UTAH

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1. SUMMARY OF DAILY ACTIVITY	1
2. BIT RECORD	2
3. DEVIATION SHEET	3
4. DST & SHOW SHEETS	4-7
5. FORMATION TOPS	8
6. CORE DESCRIPTION	9-10

(1) COPY FINAL MUD LOG (5"=100')
(1) COPY FINAL MUD LOG (2.5"=100')

DRILLING CONTRACTOR: COLEMAN RIG #3
FARMINGTON, NEW MEXICO

DRILLING FOREMAN: MR. RALPH SLOANE

PUSHER: MR. GLEN STORIE

GEO TECHNOLOGISTS: MS. JAN JOHNSON - MR. ROGER HAUSEN
INTERMOUNTAIN GEO-TECH, INC.
P. O. BOX 158
DELTA, CO 81416

DRILLING FLUID: MR. JOHN HUNTER
HUNTER MUD
FARMINGTON, NEW MEXICO

DRILL STEM TESTS: MR. BRYAN SCOTT
LYNES
CORTEZ, CO

CORING: MR. MIKE COONEY
CHRISTENSEN
FARMINGTON, NEW MEXICO

WIRE LINE LOGS: MS. MICHELLE PROSSER
SCHLUMBERGER
FARMINGTON, NEW MEXICO

GEOLOGIST: MR. RIC KOPP
WINTERSHALL OIL & GAS CORP.
DENVER, CO

WINTERSHALL OIL & GAS CORP.
NANCY FEDERAL 35-13 COW CANYON
SEC. 35, T37S-R25E
SAN JUAN COUNTY, UTAH

SUMMARY OF DAILY ACTIVITY

DATE	ACTIVITY	MIDNITE DEPTH	24 HOUR FOOTAGE
8/03/85	IGT UNIT #3 ON LOCATION, RIGGED, LOGGING	--	--
8/04/85	DRLG	3879'	377'
8/05/85	DRLG	4256'	328'
8/06/85	DRLG	4584'	307'
8/07/85	DRLG, TRIP FOR BIT #8, DRLG, TRIP HOLE IN PIPE & BIT #9, DRLG	4891'	150'
8/08/85	DRLG	5041'	246'
8/08/85	DRLG, REPAIR ROTARY CHAIN, DRLG	5287'	242'
8/10/85	DRLG, TOH CORE #1, CORING, TOH, LAY DOWN CORE	5529'	82'
8/11/85	TIH FOR DST #1, TESTING, DRLG	5611'	22'
8/12/85	DRLG, TOH DST #2, TIH	5633'	52'
8/13/85	TESTING, TOH, DRLG, TOH FOR E LOGS	5785'	69'
8/14/85	TOH FOR E LOGS, LOGGING	5854'	--

WINTERSHALL OIL & GAS CORP.
NANCY FEDERAL 35-13 COW CANYON
SEC. 35, T37S-R25E
SAN JUAN COUNTY, UTAH

BIT RECORD

BIT	MAKE	SIZE	TYPE	DEPTH OUT	FOOTAGE USED	HOURS
1	STC	12¼"	F-3	55'	55'	2½
2	SEC	17½"	M4NJ	55'	55'	1¼
3	REED	12¼"	FP53	1305'	1250'	21¼
4	VAREL	7 7/8"	V537C	1305'	0	
5	STC	8¾"	DGJ	1305'	126'	3½
6	VAREL	7 7/8"	V537C	3501'	2196'	64½
7	STC	7 7/8"	F-3	4904'	1403'	89½
8	SANDVIK	7 7/8"	CFS30	5027'	123'	11
9	STC	7 7/8"	F-3	5551'	524'	49½
10	CHRIS	7 7/8"	DIA	5611'	60'	7¾
11 RR#9	STC	7 7/8"	F-3	5785'	174'	16¾
12 RR#9	STC	7 7/8"	F-3	5854'	69'	5½

WINTERSHALL OIL & GAS CORP.
NANCY FEDERAL 35-13 COW CANYON
SEC. 35, T37S-R25E
SAN JUAN COUNTY, UTAH

DEVIATION SHEET FOR WELL. . . .

DEPTH	DEVIATION (DEV)
179'	$\frac{1}{2}^{\circ}$
701'	$\frac{1}{2}^{\circ}$
1305'	$\frac{3}{4}^{\circ}$
1801'	$\frac{1}{2}^{\circ}$
2326'	1 $^{\circ}$
2819'	1 $^{\circ}$
3314'	1 $^{\circ}$
3465'	1 $\frac{1}{2}^{\circ}$
3932'	1 $\frac{1}{2}^{\circ}$
4427'	$\frac{3}{4}^{\circ}$
4864'	$\frac{3}{4}^{\circ}$
5551'	$\frac{3}{4}^{\circ}$
5762'	1 $^{\circ}$

(IGT)
DST & SHOW SHEET

SHOW # 1 FROM 5546' TO 5554' DATE 8/10/85

COMPANY WINTERSHALL OIL & GAS CORP.
WELL NANCY FEDERAL 35-13 COW CANYON
FIELD WILDCAT

	BEFORE SHOW	DURING SHOW	AFTER SHOW
DRILLING RATE	5 min/ft	1½ min/ft	7 min/ft
TOTAL GAS UNITS	5 Units	73 Units	10 Units
METHANE %	tr	1.3%	0.2%
ETHANE %	--	0.34%	0.06%
PROPANE %	--	0.03%	tr
BUTANE (ISO) %	--	--	--
BUTANE (NOR) %	--	--	--
PENTANE %	--	--	--

SAMPLE LITHOLOGY DOL-MGY-BRNGY MICXL ANHY NOD TR PP VUG POR RR BRN O STN FRM-HD

SAMPLE FLOR AND CUT G BRI YEL FLOR FR-ENT CUT & OD

DST # 1 FROM 5521' TO 5611' DATE 8/11/85

	MINUTES	TOP CHART	MID CHART	BOTTOM CHART
INITIAL HYDROSTATIC		2977	2957	2966
INITIAL OPEN	30	137-165	137-192	151-185
INITIAL SHUT-IN	60	467	547	521
SECOND OPEN	60	192-219	192-222	168-235
SECOND SHUT-IN	120	1402	1437	1427
FINAL HYDROSTATIC		2950	2962	2966

1ST FLOW No blow - v weak blow in 30 min nqts

2ND FLOW Open w fr blo, 2 psi in 6 min, 2½ psi in 8 min, drop to 2 psi in 88 min

REMARKS BHT^o 131 F

DRILL PIPE RECOVERY 390' gas cut drilling mud saltwater cut

SAMPLE CHAMBER RECOVERY 100 psi, 1850 cc sl oil & gas cut drilling mud saltwater cut

DRILL PIPE- TOP- R/W= at ^oF, MIDDLE-R/W= at ^oF,

DRILL PIPE- BOTTOM-R/W= at ^oF, SAMPLE CHMR.- R/W= at ^oF,

PIT MUD-R/W= at ^oF 20,000 Chlorides

GEO-TECH Jan A. Johnson

(IGT)
DST & SHOW SHEET

SHOW # 2

FROM 5720 ' TO 5722 '

DATE 8/12/85

COMPANY WINTERSHALL OIL & GAS CORP.
WELL NANCY FEDERAL 35-13 COW CANYON
FIELD WILDCAT

	BEFORE SHOW	DURING SHOW	AFTER SHOW
DRILLING RATE	5 min/ft	2.5 min/ft	5 min/ft
TOTAL GAS UNITS	16 Units	225 Units	15 Units
METHANE %	0.32%	5.0%	0.3%
ETHANE %	0.07%	1.0%	0.06%
PROPANE %	0.03%	0.48%	0.02%
BUTANE (ISO) %	--	tr	--
BUTANE (NOR) %	--	tr	--
PENTANE %			

SAMPLE LITHOLOGY SLTST - MGY OCC DKGY QTZS IP MICA IP SL CALC FRI-MERM

SAMPLE FLOR AND CUT NSFOC

DST # 2

FROM 5756 ' TO 5785 '

DATE 8/13/85

DESERT CREEK	MINUTES	TOP CHART	MID CHART	BOTTOM CHART
INITIAL HYDROSTATIC		3220	3247	3198
INITIAL OPEN	30	76-92	77-107	82-109
INITIAL SHUT-IN	60	740	742	714
SECOND OPEN	60	100-135	107-167	109-137
SECOND SHUT-IN	120	2218	2307	2229
FINAL HYDROSTATIC		3212	3212	3185

1ST FLOW Open w/mod blo, strg blo 20" in 1 min, built to 49" in 30 min ngts

2ND FLOW Open w/strg blo 2 lb in 30 sec, built to 3 1/2 lb in 15 min decr to 2 1/2 lb in 60 min ngts

REMARKS BHT^o 136 F

DRILL PIPE RECOVERY 300' fluid: 60' sl gcm, 120' hgcm w/film of oil

SAMPLE CHAMBER RECOVERY 90 psi, 500 cc hocm, 300 cc oil, 1200 cc ho&hgcm emulsion

DRILL PIPE- TOP- R/W= at ^oF, MIDDLE-R/W= at ^oF,

DRILL PIPE- BOTTOM-R/W= at ^oF, SAMPLE CHMBR.- R/W= at ^oF,

PIT MUD-R/W= at ^oF

GEO-TECH Jan A. Johnson

(IGT)
DST & SHOW SHEET

SHOW # 3

FROM 5744 ' TO 5746 '

DATE 8/12/85

COMPANY WINTERSHALL OIL & GAS CORP.
WELL NANCY FEDERAL 35-13 COW CANYON
FIELD WILDCAT

	BEFORE SHOW	DURING SHOW	AFTER SHOW
DRILLING RATE	4 min/ft	2 min/ft	4.5 min/ft
TOTAL GAS UNITS	15 Units	195 Units	15 Units
METHANE %	0.3%	3.9%	0.3%
ETHANE %	0.06%	0.89%	0.06%
PROPANE %	0.02%	0.32%	0.02%
BUTANE (ISO) %	--	tr	--
BUTANE (NOR) %	--	tr	--
PENTANE %			

SAMPLE LITHOLOGY SLTST - MGY OCC DK GY QTZS SDY IP MICA IP SL CALC FRI-MERM

SAMPLE FLOR AND CUT NSFOC

DST # _____ FROM _____ ' TO _____ ' DATE _____
MINUTES TOP CHART BOTTOM CHART

INITIAL HYDROSTATIC

INITIAL OPEN

INITIAL SHUT-IN

SECOND OPEN

SECOND SHUT-IN

FINAL HYDROSTATIC

1ST FLOW

2ND FLOW

REMARKS

BHT^o

DRILL PIPE RECOVERY

SAMPLE CHAMBER RECOVERY

DRILL PIPE- TOP- R/W= at ^oF,

MIDDLE-R/W= at ^oF,

DRILL PIPE- BOTTOM-R/W= at ^oF,

SAMPLE CHMBR.- R/W= at ^oF,

PIT MUD-R/W= at ^oF

GEO-TECH Jan A. Johnson

(IGT)
DST & SHOW SHEET

SHOW # 4

FROM 5776 ' TO 5785 '

DATE 8/12/85

COMPANY WINTERSHALL OIL & GAS CORP.
WELL NANCY FEDERAL 35-13 COW CANYON
FIELD WILDCAT

	BEFORE SHOW	DURING SHOW	AFTER SHOW
DRILLING RATE	5.5 min/ft	1-2 min/ft	
TOTAL GAS UNITS	15 Units	90-220 Units	
METHANE %	.3%	4.8%	
ETHANE %	.06%	1.15%	
PROPANE %	.02%	.56%	
BUTANE (ISO) %	tr	tr+	
BUTANE (NOR) %	tr	tr+	
PENTANE %			

SAMPLE LITHOLOGY LS - LTGY-BF MICXL-FXL TR GRAN Ø CLN FRM

SAMPLE FLOR AND CUT SL DULL YEL FLOR V ENT MKY CUT

DST # _____ FROM _____ ' TO _____ ' DATE _____
MINUTES TOP CHART BOTTOM CHART

INITIAL HYDROSTATIC

INITIAL OPEN

INITIAL SHUT-IN

SECOND OPEN

SECOND SHUT-IN

FINAL HYDROSTATIC

1ST FLOW

2ND FLOW

REMARKS BHT^o

DRILL PIPE RECOVERY

SAMPLE CHAMBER RECOVERY

DRILL PIPE- TOP- R/W= at ^oF, MIDDLE-R/W= at ^oF,

DRILL PIPE- BOTTOM-R/W= at ^oF, SAMPLE CHMR- R/W= at ^oF,

PIT MUD-R/W= at ^oF

GEO-TECH Jan A. Johnson

WINTERSHALL OIL & GAS CORP.
 NANCY FEDERAL 35-13 COW CANYON
 SEC. 35, T37S-R25E
 SAN JUAN COUNTY, UTAH

FORMATION TOPS

FORMATION	SAMPLE TOP	E-LOG	SUB-SEA
HONAKER TRAIL	4303'	4792'	+678
PARADOX SHALE	5434'	--	--
UPPER ISMAY	5468'	5472'	- 2
HOVENWEEP SHALE	5581'	5583'	-113
LOWER ISMAY	5640'	5634'	-164
GOTHIC SHALE	5696'	5692'	-222
UPPER DESERT CREEK	5712'	5710'	-240
LOWER DESERT CREEK	5802'	5810'	-340
AKAH	5822'	--	--
PARADOX EVAPORITES	5852'	--	--

WINTERSHALL OIL & GAS CORP.
NANCY FEDERAL 35-13 COW CANYON
SEC. 35, T37S-R25E
SAN JUAN COUNTY, UTAH

CORE DESCRIPTION

5551 - 5611 UPPER ISMAY CUT 60' RECOVERED 57'

5551-52 DOL - MGY-BRNGY MICXL ANHY NOD TR PP VUG POR RR BRN O STN
FRM-HD G BRI YEL FLOR FNT CUT G OD

5552-53 DOL - MGY-BRNGY MICXL ANHY NOD TR PP VUG POR RR BRNGY
O STN FRM-HD G BRI YEL FLOR FR CUT G OD

5553-54 DOL - MGY-BRNGY MICXL ANHY NOD FOS TR PP VUG POR RR BRN
O STN FRM-HD FR BRI YEL FLOR FNT CUT G OD

5554-55 LS - MGY MICXL-FXL FOS ANHY XL RR PP VUG POR N STN FRM-
HD FR YEL FLOR FNT CUT N OD

5555-56 LS - M-DKGY MICXL FOS STYL TR ANHY XL N VIS POR FRM-HD
NSFOC

5556-57 LS - DKGYBRN MICXL ANHY NOD N VIS POR FRM-HD NSFOC

5557-58 LS - DKGYBRN MICXL ANHY XL N VIS POR FRM-HD NSFOC

5558-59 LS - DKGYBRN MICXL TR ANHY XL N VIS POR FRM-HD NSFOC

5559-60 LS - VDKGYBRN MICXL FOS FORAM STYL N VIS POR FRM-HD
NSFOC

5560-61 LS - BLK MICXL FOS FORAM N VIS POR FRM-HD NSFOC

5561-62 LS - BLK MICXL FOS FORAM STYL N VIS POR FRM-HD NSFOC

5562-63 LS - BLK MICXL FOS FORAM STYL N VIS POR FRM-HD NSFOC

5563-64 LS - BLK MICXL FOS FORAM STYL N VIS POR FRM-HD NSFOC

5564-65 LS - DKGYBRN-BLK MICXL FOS BRAC SPG SPIC N VIS POR FRM-
HD NSFOC

5565-66 LS - DKGYBRN MICXL FOS TR ANHY XL STYL N VIS POR FRM-HD
NSFOC

5566-67 LS - DKGYBRN MICXL FOS N VIS POR FRM-HD NSFOC

5567-68 LS - DKGYBRN MICXL SL FOS N VIS POR FRM-HD NSFOC

5568-69 LS - MGYBRN MICXL STYL TR ANHY XL N VIS POR FRM-HD NSFOC

5569-70 LS - MGYBRN MICXL SL FOS STYL N VIS POR FRM-HD NSFOC

5570-71 LS - LTGYBRN MICXL SL FOS N VIS POR FRM-HD NSFOC

5571-72 LS - LTGYBRN MICXL SL FOS N VIS POR FRM-HD NSFOC

5572-73 LS - LTGY MICXL SL FOS SPG SPIC N VIS POR FRM-HD NSFOC

5573-74 LS - LTGY MICXL SL FOS STYL N VIS POR FRM-HD NSFOC

5574-75 LS - LT-MBRNGY MICXL FOS STYL ANHY NOD N VIS POR FRM-
HD N STN TR DULL FLOR FNT CUT

WINTERSHALL OIL & GAS CORP.
 NANCY FEDERAL 35-13 COW CANYON
CORE DESCRIPTION CONTINUED

5575-76	LS	-	MGYBRN	MICXL	FOS	BRAC	N	VIS	POR	FRM-HD	NSFOC
5576-77	LS	-	MGYBRN	MICXL	FOS	ANHY	NOD	N	VIS	POR	FRM-HD NSFOC
5577-78	LS	-	MGY	MICXL	FOS	BRAC	N	VIS	POR	FRM-HD	NSFOC
5578-79	LS	-	MGY	MICXL	FOS	BRAC	ANHY	XL	N	VIS	POR FRM-HD NSFOC
5579-80	LS	-	MGY	MICXL	FOS	STYL	N	VIS	POR	FRM-HD	NSFOC
5580-81	LS	-	DKGY	MICXL	V	FOS	N	VIS	POR	FRM-HD	N STN DULL ORNG MNRL FLOR N CUT
5581-82	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5582-83	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5583-84	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5584-85	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5585-86	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5586-87	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5587-88	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5588-89	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5589-90	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5590-91	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5591-92	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5592-93	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5593-94	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5594-95	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5595-96	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5596-97	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5597-98	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5598-99	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5599-5600	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5600-01	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5601-02	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5602-03	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5603-04	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5604-05	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5605-06	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5606-07	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD
5607-08	SH	-	BLK	PLTY	RTHY	SLTY	MICA	FOS	IP	SL	CALC FRM-HD

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil ☒ gas ☐
well well other2. NAME OF OPERATOR
Wintershall Oil and Gas Corporation3. ADDRESS OF OPERATOR
5675 DTC Blvd., #200, Englewood, CO 80111

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)

AT SURFACE: 1940' FSL & 1100' FWL (NWSW)

AT TOP PROD. INTERVAL: Same

AT TOTAL DEPTH: Same

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:

TEST WATER SHUT-OFF ☐
FRACTURE TREAT ☐
SHOOT OR ACIDIZE ☐
REPAIR WELL ☐
PULL OR ALTER CASING ☐
MULTIPLE COMPLETE ☐
CHANGE ZONES ☐
ABANDON* ☐

(other) Well Status

SUBSEQUENT REPORT OF:

☐
☐
☐
☐
☐
☐
☐
☐
☒5. LEASE
U-184526. IF INDIAN, ALLOTTEE OR TRIBE NAME
None7. UNIT AGREEMENT NAME
Little Nancy Unit8. FARM OR LEASE NAME
Cow Canyon9. WELL NO.
#35-1310. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Sec. 35, T37S-R25E

12. COUNTY OR PARISH 13. STATE
San Juan Utah14. API NO.
43-037-3117515. ELEVATIONS (SHOW DF, KDB, AND WD)
5457'GR; 5471'KB

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spudded well on 7/26/85, at 2215 hours, with 12¼" bit. Drilled to 55'. Reamed hole to 17½". Ran 1 jt, 13-3/8" conductor pipe and cemented back to surface with 65 sxs Class B cement. Circulated 10 sxs to surface.

Drilled to 1305' with 12¼" bit. Ran 32 jts, 9-5/8", .36#, J-55 ST&C surface casing and set at 1305'. Cemented with 400 sxs 65/35 Poz and tailed in with 200 sxs Class B. Circulated 95 sxs of good cement to surface.

Current operation is drilling ahead at 4664'.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED David Howell TITLE Operations Manager DATE 8/6/85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL IF ANY:

cc: Utah DOGM (2) ✓

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DIVISION OF OIL
GAS & MINING

*See Instructions on Reverse Side

CORE LABORATORIES, INC.



Petroleum Reservoir Engineering

COMPANY WINTERSHALL OIL & GAS CORP.

FILE NO. 3803-003308

WELL NANCY-COW CANYON 35-13 FEDERAL

DATE 11-AUG-1985

FIELD WILDCAT

FORMATION UPPER ISMAY

ELEV. 5470 KB

COUNTY SAN JUAN STATE UTAH

DRLG. FLD. WBM

CORES

LOCATION NW, SW SEC. 35-T37S-R25E

CORRELATION COREGRAPH

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc., (all errors or omissions excepted); but Core Laboratories, Inc., and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

VERTICAL SCALE: 5" = 100'

Total Water

PERCENT PORE SPACE

100 80 60 40 20 0

Gamma Ray

RADIATION INCREASE

Permeability

MILLIDARCIES

Porosity

PERCENT

Oil Saturation

PERCENT PORE SPACE

PARADOX FORMATION

100 10 1.0 .1

Depth Feet 30

20

10

0 0 20 40 60 80 100

UPPER ISMAY ZONE

e-1 5551-5611 (3' core)

5500

5550

5600

5650

**CORE LABORATORIES, INC.***Petroleum Reservoir Engineering*

COMPANY WINTERSHALL OIL & GAS CORP. FILE NO. 3803-003398
 WELL NANCY-COW CANYON # 35-13 DATE 14-AUG-1985 ENGRS. DS;EV
 FIELD WILDCAT FORMATION UPPER ISMAY ELEV. 5470 KB
 COUNTY SAN JUAN STATE UTAH DRLG. FLD. WBM CORES _____

CoRes Log

CORE and RESISTIVITY EVALUATION

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted) but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proven operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

RESISTIVITY PARAMETERS: $a = 1.0$ $m = 2.0$ $n = 2.0$. Depths 5551 to 5578 .
 $a =$ _____ $m =$ _____ $n =$ _____ . Depths _____ to _____ .

PERMEABILITY
MILLIDARCIES

CORE ANALYSIS CALCULATED RESISTIVITY R_o = OHM-METERS AT 100% S_w _____ R_{mp} = OHM-METERS AT CRITICAL S_w _____DEPTH
FEET

1000 100 10 1.0 0.1 0.01

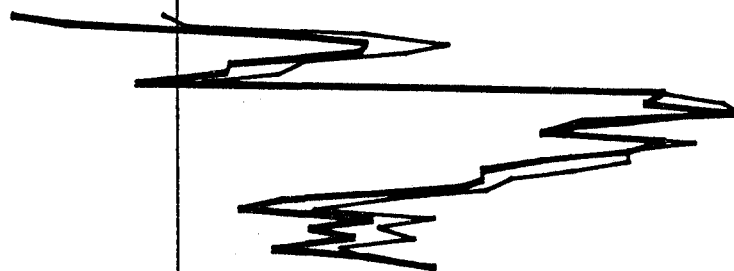
5500

5550

5600

← ONE OHM-METER REFERENCE FOR $R_w = 0.01$

UPPER ISMAY ZONE



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AUG 26 1985

DIVISION OF OIL
GAS & MININGSTATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
4241 State Office Building
Salt Lake City, UT 84114

8/23/85

REPORT OF WATER ENCOUNTERED DURING DRILLING

Well Name & Number COW CANYON #35-13

Operator Wintershall Oil and Gas Corp. Address 5675 DTC Blvd, Ste. 200
Englewood, CO 80111

Contractor Coleman Drilling Co. Address Drawer 3337
Farmington, NM 87499

Location NW 1/4 SW 1/4 Sec. 35 T. 37S R. 25E County San Juan

Water Sands

	<u>Depth</u>		<u>Volume</u>	<u>Quality</u>
	<u>From</u>	<u>To</u>	<u>Flow Rate or Head</u>	<u>Fresh or Salty</u>
1.	2354-	2397'	No rate	Salt Water
2.				
3.				
4.				
5.				

(Continue on reverse side if necessary)

<u>Formation Tops</u>	Morrison - Surface	Cutler - 2450'
	Entrada - 650'	Hermosa - 4760'
	Carmel - 750'	Ismay - 5474'
	Navajo - 830'	Desert Creek - 5708'
	Chinle - 1540'	Akah - 5824'
<u>Remarks</u>	DeChelley - 2350'	

- NOTE: (a) Report on this form as provided for in Rule C-20, General Rules and Regulations and Rules of Practice and Procedure.
- (b) If a water analysis has been made of the above reported zone, please forward a copy along with this form.

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AUG 26 1985SUNDRY NOTICES AND REPORTS ON REOIS
DIVISION OF OIL
GAS & MINING

(Do not use this form for proposals to drill or to deepen or plug existing different reservoir. Use Form 9-331-C for such proposals.)

1. oil ☒ gas ☐ other ☐
well well

2. NAME OF OPERATOR
Wintershall Oil and Gas Corporation

3. ADDRESS OF OPERATOR
5675 DTC Blvd., #200, Englewood, CO 80111

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1940' FSL & 1100' FWL (NWSW)
AT TOP PROD. INTERVAL: Same
AT TOTAL DEPTH: Same

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:

SUBSEQUENT REPORT OF:

TEST WATER SHUT-OFF ☐
FRACTURE TREAT ☐
SHOOT OR ACIDIZE ☐
REPAIR WELL ☐
PULL OR ALTER CASING ☐
MULTIPLE COMPLETE ☐
CHANGE ZONES ☐
ABANDON* ☒
(other) ☐

☐
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(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled well to a driller's total depth of 5854'.

Plugged well, per verbal approval from BLM, as follows:

Plug #1 5854-5635' with 55 sxs Class B
Plug #2 5536-5400' with 50 sxs Class B
Plug #3 2416-2300' with 120 sxs Class B
Plug #4 1360-1260' with 45 sxs Class B
Plug #5 24' to surface with 10 sxs Class B

Rig down and released drilling rig at 6 a.m., 8/17/85. Well plugged and abandoned.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED William J. Howell TITLE Operations Mgr. DATE 8/22/85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL IF ANY:

CC: Utah DOGM (2)

ACCEPTED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

*See Instructions on Reverse Side

DATE: 8/30/85
BY: John R. Baya

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS REPORT

FOR

WINTERSHALL OIL & GAS CORP.

NANCY-COW CANYON 35-13 FEDERAL
WILDCAT
SAN JUAN, UTAH

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SEP 09 1985

DIVISION OF OIL
GAS & MINING

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering

DALLAS, TEXAS

WINTERSHALL OIL & GAS CORP.
 NANCY-COW CANYON 35-13 FEDERAL
 WILDCAT
 SAN JUAN, UTAH

DATE : 11-AUG-1985
 FORMATION : UPPER ISMAY
 DRG. FLUID: WBM
 LOCATION : NW SW SEC. 35-T37S-R25E

FILE NO : 3803-003398
 ANALYSTS : DS/EV
 ELEVATION: 5470 KB

FULL DIAMETER ANALYSIS-BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO MAXIMUM	AIR (MD) 90 DEG	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION	
1	5551.0-52.0	8.33	7.53	22.1	10.0	38.0	2.84	DOL BRN VFXLN P-P	
2	5552.0-53.0	1.86	1.27	17.0	7.5	41.0	2.83	DOL BRN VFXLN P-P	
3	5553.0-54.0	0.14	0.14	6.0	6.7	50.3	2.80	DOL BRN VFXLN P-P	
4	5554.0-55.0	0.19	0.17	4.1	0.0	16.6	2.79	DOL BRN VFXLN	
5	5555.0-56.0	0.03	0.03	4.3	0.0	43.2	2.80	DOL BRN VFXLN	
6	5556.0-57.0	0.09	0.07	7.9	0.0	25.8	2.84	DOL BRN VFXLN	
7	5557.0-58.0	0.04	0.02	8.0	0.0	55.8	2.82	DOL BRN VFXLN	
8	5558.0-59.0	0.06	0.04	12.2	0.0	74.2	2.81	DOL BRN VFXLN	
9	5559.0-60.0	0.01	*	1.0	0.0	24.2	2.70	LM DKGRY VFXLN FOSS	
10	5560.0-61.0	0.16	0.10	1.1	0.0	46.6	2.70	LM DKGRY VFXLN FOSS	
11	5561.0-62.0	0.01	0.01	0.7	0.0	24.8	2.71	LM DKGRY VFXLN FOSS	
12	5562.0-63.0	0.04	0.01	1.5	0.0	33.8	2.73	LM DKGRY VFXLN FOSS	
13	5563.0-64.0	0.01	0.01	1.8	0.0	24.9	2.75	LM DKGRY VFXLN FOSS	
14	5564.0-65.0	0.02	0.01	1.0	0.0	23.8	2.71	LM GRV VFXLN FOSS	
15	5565.0-66.0	<0.01	*	1.2	0.0	27.3	2.71	LM LTGRY VFXLN	
16	5566.0-67.0	0.28	0.04	1.8	0.0	41.1	2.72	LM LTGRY VFXLN	**
17	5567.0-68.0	0.33	0.16	2.4	0.0	56.8	2.72	LM LTGRY VFXLN STYL	**
18	5568.0-69.0	0.02	0.02	2.4	0.0	29.5	2.72	LM LTGRY VFXLN	
19	5569.0-70.0	0.02	0.02	2.7	0.0	30.4	2.73	LM LTGRY VFXLN	
20	5570.0-71.0	1.48	0.04	6.2	0.0	61.3	2.76	LM LTGRY VFXLN SL/DOL	**
21	5571.0-72.0	0.10	0.06	7.6	0.0	50.8	2.78	LM LTGRY VFXLN SL/DOL	**
22	5572.0-73.0	0.05	0.04	4.0	0.0	66.5	2.75	LM LTGRY VFXLN SL/DOL	
23	5573.0-74.0	0.07	0.05	5.4	0.0	60.9	2.77	DOL LTBRN VFXLN SL/CALC	**
24	5574.0-75.0	0.05	0.04	4.4	1.5	30.7	2.78	DOL LTBRN VFXLN SL/CALC	
25	5575.0-76.0	0.07	0.04	6.5	0.0	35.2	2.83	DOL LTBRN VFXLN SL/CALC	
26	5576.0-77.0	0.01	0.01	4.1	0.0	77.9	2.73	LM LTGRY VFXLN	
27	5577.0-78.0	<0.01	*	3.0	0.0	30.9	2.74	LM LTGRY VFXLN	
	5578.0-08.0							SHALE -- NO ANALYSIS	

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering

DALLAS, TEXAS

WINTERSHALL OIL & GAS CORP.
 NANCY-COW CANYON 35-13 FEDERAL

DATE : 11-AUG-1985
 FORMATION : UPPER ISMAY

FILE NO : 3803-003398
 ANALYSTS : DS#EV

FULL DIAMETER ANALYSIS-BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	POR. 90 DEG He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION
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5608.0-11.0

CORE LOSS

** DENOTES FRACTURE PERMEABILITY

* SAMPLE NOT SUITABLE FOR FULL DIAMETER ANALYSIS

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

WINTERSHALL OIL & GAS CORP.
NANCY-COW CANYON 35-13 FEDERAL

DATE : 11-AUG-1985
FORMATION : UPPER ISMAY

FILE NO. : 3803-003398
ANALYSTS : DS;EV

*** CORE SUMMARY AVERAGES FOR 1 ZONE ***

DEPTH INTERVAL: 5551.0 TO 5578.0

FEET OF CORE ANALYZED : 27.0 FEET OF CORE INCLUDED IN AVERAGES: 27.0

--- SAMPLES FALLING WITHIN THE FOLLOWING RANGES WERE AVERAGED ---

PERMEABILITY MAXIMUM RANGE (MD.)	:	0.00 TO 100.	(UNCORRECTED FOR SLIPPAGE)
HELIUM POROSITY RANGE (%)	:	0.0 TO 100.0	
OIL SATURATION RANGE (%)	:	0.0 TO 100.0	
WATER SATURATION RANGE (%)	:	0.0 TO 100.0	

SHALE SAMPLES EXCLUDED FROM AVERAGES.

AVERAGES FOR DEPTH INTERVAL: 5551.0 TO 5578.0

AVERAGE PERMEABILITY (MILLIDARCIES)

ARITHMETIC PERMEABILITY	:	0.50
GEOMETRIC PERMEABILITY	:	0.06
HARMONIC PERMEABILITY	:	0.01
GEOMETRIC MAXIMUM & 90 DEG PERM.	:	0.04

PRODUCTIVE CAPACITY (MILLIDARCY-FEET)

ARITHMETIC CAPACITY	:	13.
GEOMETRIC CAPACITY	:	1.5
HARMONIC CAPACITY	:	0.26
GEOMETRIC MAXIMUM & 90 DEG CAPACITY:	:	1.2

AVERAGE POROSITY (PERCENT) : 5.2

AVERAGE TOTAL WATER SATURATION : 45.5
(PERCENT OF PORE SPACE)

AVERAGE RESIDUAL OIL SATURATION : 2.8
(PERCENT OF PORE SPACE)

AVERAGE CONNATE WATER SATURATION ** : 45.3
(PERCENT OF PORE SPACE)

** ESTIMATED FROM TOTAL
WATER SAUTRATION.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

PAGE NO. 1

PERMEABILITY VS POROSITY

COMPANY: WINTERSHALL OIL & GAS CORP.
FIELD : WILDCAT

WELL : NANCY-COW CANYON 35-13 FEDERAL
COUNTY, STATE: SAN JUAN, UTAH

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY		POROSITY		POROSITY AVERAGE	PERMEABILITY AVERAGES		
		MINIMUM	MAXIMUM	MIN.	MAX.		ARITHMETIC	HARMONIC	GEOMETRIC
5551.0 - 5578.0	1 (+)	0.000	100.0	0.0	50.0	5.2	0.50	0.01	0.06

PERMEABILITY: MILLIDARCIES

0.1

0.01

0.0

4.0

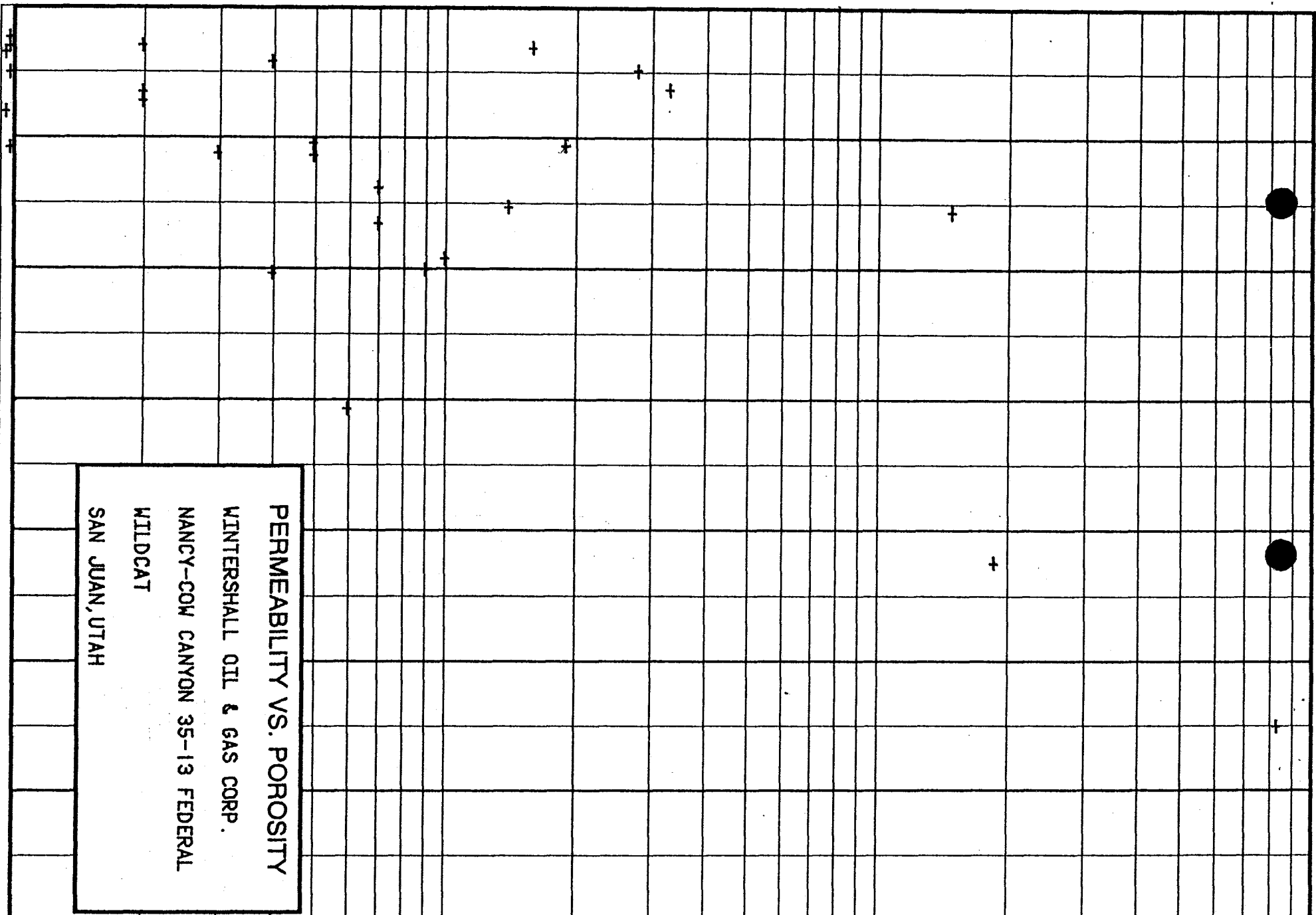
8.0

12.0

16.0

20.0

24.0



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

PAGE 1

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: WINTERSHALL OIL & GAS CORP.
FIELD : WILDCAT

WELL : NANCY-COW CANYON 35-13 FEDERAL
COUNTY, STATE: SAN JUAN, UTAH

AIR PERMEABILITY : MD. (HORIZONTAL) RANGE USED 0.000 TO 100.
POROSITY : PERCENT (HELIUM) RANGE USED 0.0 TO 46.0

(PERMEABILITY UNCORRECTED FOR SLIPPAGE)

DEPTH LIMITS : 5551.0 - 5578.0 INTERVAL LENGTH : 27.0
FEET ANALYZED IN ZONE : 27.0 LITHOLOGY EXCLUDED : NONE

DATA SUMMARY

POROSITY AVERAGE	PERMEABILITY AVERAGES		
	ARITHMETIC	HARMONIC	GEOMETRIC
5.2	0.50	0.01	0.06

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: WINTERSHALL OIL & GAS CORP.
 FIELD : WILDCAT

WELL : NANCY-COW CANYON 35-13 FEDERAL
 COUNTY, STATE: SAN JUAN, UTAH

GROUPING BY POROSITY RANGES

POROSITY RANGE	FEET IN RANGE	AVERAGE POROSITY	AVERAGE PERM.		FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
			(GEOM.)	(ARITH)		
0.0 - 2.0	8.0	1.3	0.025	0.067	29.6	29.6
2.0 - 4.0	4.0	2.6	0.028	0.094	14.8	44.4
4.0 - 6.0	6.0	4.4	0.046	0.067	22.2	66.7
6.0 - 8.0	5.0	6.8	0.167	0.376	18.5	85.2
8.0 - 10.0	1.0	8.0	0.040	0.040	3.7	88.9
12.0 - 14.0	1.0	12.2	0.060	0.060	3.7	92.6
16.0 - 18.0	1.0	17.0	1.9	1.9	3.7	96.3
22.0 - 24.0	1.0	22.1	8.3	8.3	3.7	100.0

TOTAL NUMBER OF FEET = 27.0

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: WINTERSHALL OIL & GAS CORP.
 FIELD : WILDCAT

WELL : NANCY-COW CANYON 35-13 FEDERAL
 COUNTY, STATE: SAN JUAN, UTAH

GROUPING BY PERMEABILITY RANGES

PERMEABILITY RANGE	FEET IN RANGE	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	AVERAGE POROSITY	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.005 - 0.010	2.0	0.005	0.005	2.1	7.4	7.4
0.010 - 0.020	4.0	0.010	0.010	1.9	14.8	22.2
0.020 - 0.039	4.0	0.022	0.023	2.6	14.8	37.0
0.039 - 0.078	7.0	0.053	0.054	6.0	25.9	63.0
0.078 - 0.156	3.0	0.108	0.110	7.2	11.1	74.1
0.156 - 0.312	3.0	0.204	0.210	2.3	11.1	85.2
0.312 - 0.625	1.0	0.330	0.330	2.4	3.7	88.9
1.250 - 2.500	2.0	1.7	1.7	11.6	7.4	96.3
5.- 10.	1.0	8.3	8.3	22.1	3.7	100.0

TOTAL NUMBER OF FEET = 27.0

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: WINTERSHALL OIL & GAS CORP.
 FIELD : WILDCAT

WELL : NANCY-COW CANYON 35-13 FEDERAL
 COUNTY, STATE: SAN JUAN, UTAH

POROSITY-FEET OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

POROSITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	ARITH MEAN	MEDIAN
0.0	0.0	0.0	27.0	100.0	5.2	4.5
2.0	8.0	7.2	19.0	92.8	6.9	5.8
4.0	12.0	14.7	15.0	85.3	8.0	6.6
6.0	18.0	33.4	9.0	66.6	10.4	
8.0	23.0	57.8	4.0	42.2	14.8	14.0
10.0	24.0	63.5	3.0	36.5	17.1	17.0
12.0	24.0	63.5	3.0	36.5	17.1	17.0
14.0	25.0	72.2	2.0	27.8	19.5	18.0
16.0	25.0	72.2	2.0	27.8	19.5	18.0
18.0	26.0	84.3	1.0	15.7	22.1	23.0
20.0	26.0	84.3	1.0	15.7	22.1	
22.0	26.0	84.3	1.0	15.7	22.1	
24.0	27.0	100.0	0.0	0.0		

TOTAL STORAGE CAPACITY IN POROSITY-FEET = 140.4

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

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STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

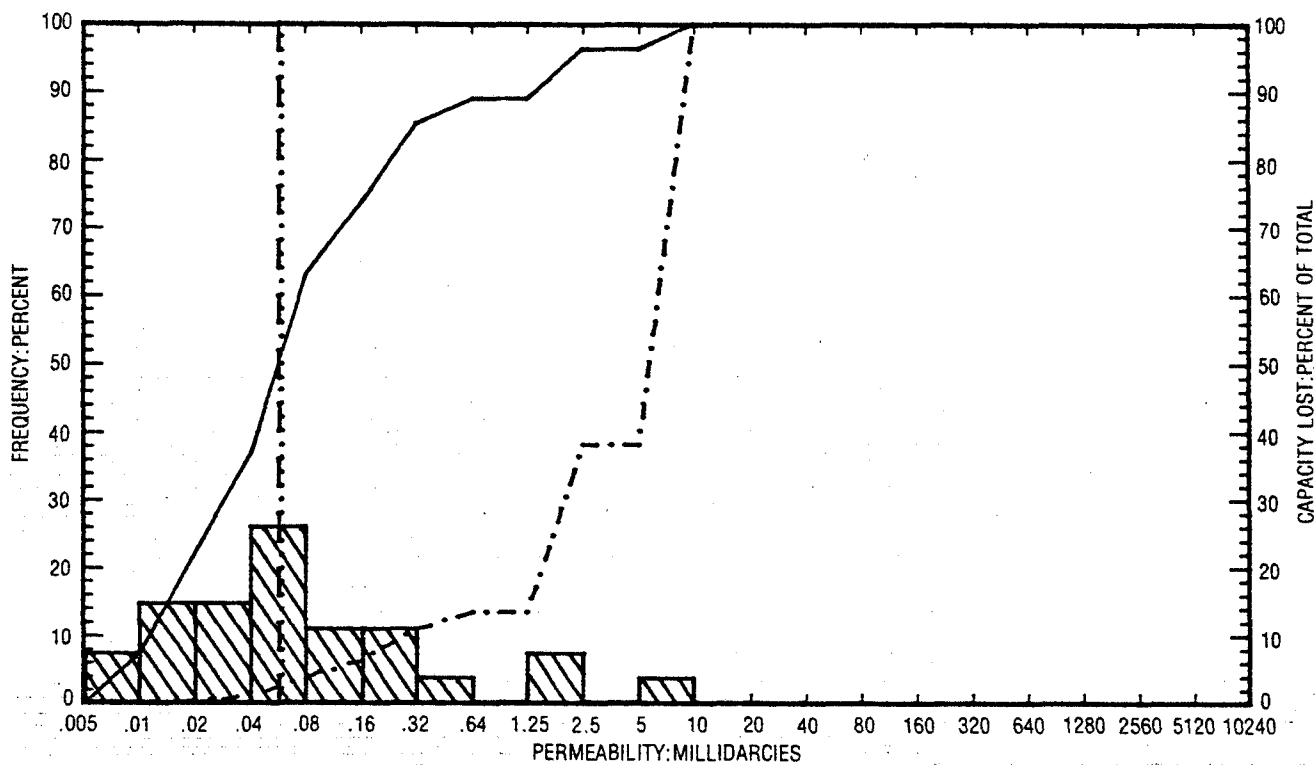
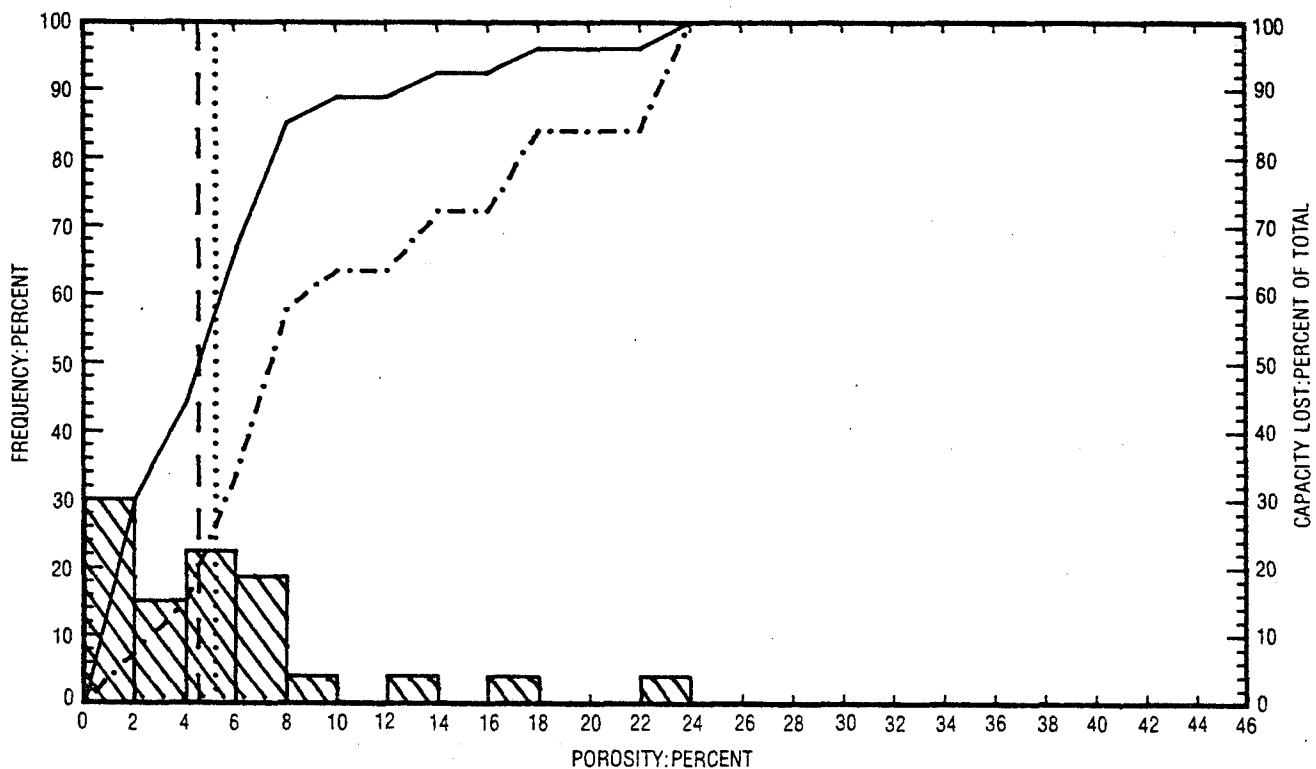
COMPANY: WINTERSHALL OIL & GAS CORP.
FIELD : WILDCAT

WELL : NANCY-COW CANYON 35-13 FEDERAL
COUNTY, STATE: SAN JUAN, UTAH

MILLIDARCY-FEET OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

PERMEABILITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	GEOM MEAN	MEDIAN
0.005	0.0	0.0	27.0	100.0	0.06	0.06
0.010	2.0	0.1	25.0	99.9	0.08	0.06
0.020	6.0	0.4	21.0	99.6	0.12	0.07
0.039	10.0	1.0	17.0	99.0	0.17	0.11
0.078	17.0	3.9	10.0	96.1	0.39	0.25
0.156	20.0	6.3	7.0	93.7	0.68	0.44
0.312	23.0	11.0	4.0	89.0	1.66	1.77
0.625	24.0	13.4	3.0	86.6	2.84	
1.250	24.0	13.4	3.0	86.6	2.84	
2.500	26.0	38.2	1.0	61.8	8.33	
5.	26.0	38.2	1.0	61.8	8.33	
10.	27.0	100.0	0.0	0.0		

TOTAL FLOW CAPACITY IN MILLIDARCY-FEET (ARITHMETIC) = 13.47



PERMEABILITY AND POROSITY HISTOGRAMS

WINTERSHALL OIL & GAS CORP.
NANCY-COW CANYON 35-13 FEDERAL
WILDCAT
SAN JUAN, UTAH

LEGEND

ARITHMETIC MEAN POROSITY
GEOMETRIC MEAN PERMEABILITY
MEDIAN VALUE
CUMULATIVE FREQUENCY
CUMULATIVE CAPACITY LOST

DOWELL SCHLUMBERGER INCORPORATED

CUSTOMER

OILFIELD SERVICES
MINING SERVICES
INDUSTRIAL SERVICES

DS SERVICE ORDER,
RECEIPT, AND INVOICE NO.

CORRESPONDENCE:
P.O. BOX 4378
HOUSTON, TEXAS 77210

REMITTANCE:
P.O. BOX 100344
HOUSTON, TEXAS 77212

DS SERVICE LOCATION NAME AND NUMBER

CORTEZ 15-69

CUSTOMER NUMBER

921031

CUSTOMER P.O. NUMBER

TYPE SERVICE CODE

295

BUSINESS CODES

WORKOVER
NEW WELL
OTHER

☐ W
☒ N
☐ N

API OR IC NUMBER

CUSTOMER'S
NAME

WINTER SHAH OIL AND GAS

ADDRESS

Suite 200

5675 DTC Blvd.

CITY, STATE AND
ZIP CODE

Englewood, COLORADO

80111

DS shall furnish and Customer shall purchase materials and services required in the performance of the following SERVICE INSTRUCTIONS or DS INDUSTRIAL SERVICE CONTRACT NO. _____:

FURNISH EQUIPMENT AND MATERIALS
TO DO A PLUG AND ABANDON

IMPORTANT
SEE OTHER SIDE FOR TERMS & CONDITIONS

ARRIVE LOCATION MO DAY YR TIME
8 16 85 1730

SERVICE ORDER I authorize work to begin per service instructions in accordance with terms and conditions printed on the reverse side of this form and represent that I have authority to accept and sign this order.

CUSTOMER AUTHORIZED AGENT

R.G. Slone

JOB COMPLETION MO DAY YR TIME
08 17 85 0200

SERVICE RECEIPT I certify that the materials and services listed were received and all services performed in a workmanlike manner.

CUSTOMER AUTHORIZED AGENT

R.G. Slone

SHIPPED VIA

DS Services

STATE CODE COUNTY / PARISH CODE CITY

UTAH

43

SAN JUAN

037

WELL NAME AND NUMBER / JOB SITE LOCATION AND POOL / PLANT ADDRESS

NANCY FEDERAL 35-13

SEC 35 T3D5 R25 E

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
059200 001	Pumping Unit Mileage	mile	65	2.20	143.00
049102 001	Delivery Charge	ton/mile	855	.75	641.25
049100 000	Service Charge	FT3	280	.95	266.00
048258 000	Depth Charge - 5000'	each	1	1770.00	1770.00
048258 001	Depth Charge - 846'	Foot	846	.20	169.20
100825 122	D917 High Early Cement	Sack	280	7.20	2016.00
047003 005	P47 Anti Former	gal	1	22.00	22.00

000006001 Con Form To Bid Equipment
000006002 Con Form To Bid Material

< 747.36 >
< 509.50 >

SERVICE
ORDER
AND
RECEIPT

Field Estimate #3770459

SUB TOTAL

LICENSE/REIMBURSEMENT FEE

LICENSE/REIMBURSEMENT FEE

REMARKS:

STATE

% TAX ON \$

COUNTY

% TAX ON \$

CITY

% TAX ON \$

DS REPRESENTATIVE

TOTAL \$

Bill Gallagher

CEMENTING SERVICE REPORT

DWL-496-M PRINTED IN U.S.A.

DOWELL

DOWELL DIVISION OF DOW CHEMICALS
OPERATING UNIT OF THE DOW CHEMICAL COMPANY

TREATMENT NUMBER

15-69-1142

DATE

8-16-75

AGE

DOWELL DISTRICT

CARTER 15-69

WELL NAME AND NO. <i>LOW Canyon</i>		LOCATION (LEGAL) <i>SEC 35 T30S R25C</i>		RIG. NAME: <i>Coleman</i>	
FIELD-POOL <i>Alamy Fork 35-13</i>		FORMATION		WELL DATA:	
COUNTY/PARISH <i>SAN JUAN</i>		STATE <i>UTAH</i>	API. NO.	BIT SIZE <i>7 7/8</i>	CSG/LINER SIZE
NAME <i>Wm Texsall</i>		AND <i>51114 200 5675 DTC Blvd.</i>		TOTAL DEPTH	WEIGHT
ADDRESS <i>176 Glenwood, Colorado</i>		ZIP CODE <i>80111</i>		<input type="checkbox"/> ROT <input type="checkbox"/> CABLE	TOP
SPECIAL INSTRUCTIONS		MUD TYPE <i>Dispers</i>		BHST	BHCT
FURNISH EQUIPMENT AND MATERIALS TO DO A plug + ABANDON		MUD DENSITY <i>10.1</i>		GRADE	THREAD
#1 Plug 5846-5635 #2 Plug 5536		MUD VISC. <i>43</i>		CAPACITY	TOTAL
5400 #3 Plug 2416-2300 #4		HEAD & PLUGS <input type="checkbox"/> TBG <input checked="" type="checkbox"/> D.P.		SQUEEZE JOB	
Plug 1360-1260 #5 Surface Plug		<input type="checkbox"/> DOUBLE <input type="checkbox"/> SINGLE		SIZE <i>4 1/2</i>	TOOL TYPE
PRESSURE LIMIT		PSI	BUMP PLUG TO <i>N/A</i>	PSI	DEPTH
ROTATE		RPM	RECIPROCAT	FT	NO. OF CENTRALIZERS
SWAGE		GRADE	THREAD <i>X Hole</i>	TAIL PIPE: SIZE	DEPTH
KNOCKOFF		NEW <input type="checkbox"/> USED	DEPTH	TUBING VOLUME	Bbls
TOP <input type="checkbox"/> R <input type="checkbox"/> W		NEW <input type="checkbox"/> USED	DEPTH	CASING VOL. BELOW TOOL	Bbls
BOT <input type="checkbox"/> R <input type="checkbox"/> W		DEPTH	DEPTH	TOTAL	Bbls
SHOE		TYPE	DEPTH	ANNUAL VOLUME	Bbls
FLOAT		TYPE	DEPTH	STAGE TOOL	TYPE
SHOE		TYPE	DEPTH	STAGE TOOL	TYPE
SHOE		TYPE	DEPTH	STAGE TOOL	TYPE

TIME	PRESSURE		VOLUME PUMPED BBL		JOB SCHEDULED FOR		ARRIVED ON LOCATION		LEFT LOCATION		
	TBG OR D.P.	CASING	INCREMENT	CUM	INJECT RATE	FLUID TYPE	FLUID DENSITY	TIME	DATE	TIME	DATE
0001 to 2400											
1730								SERVICE LOG DETAIL			
1730	Ø		11 1/2		3	CMT	15.6	PRE-JOB SAFETY MEETING, Hook up Equipment			
1935			80	91 1/2	6	Mud		Pump 55 sk cement #1 Plug			
1950	Ø		10 1/2	102	3	CMT	15.6	Displace with mud			
2000			76 1/2	178 1/2	6	Mud		Pump 50 sk cement #2 Plug			
2145	Ø		25	203 1/2	3	CMT	15.6	Displace with mud			
2200			32 1/2	236	6	Mud		Pump 120 sk cement #3 Plug			
2300	Ø		9 1/2	245 1/2	3	CMT	5.6	Displace with mud			
2315			17	262 1/2	6	Mud		Pump 45 sk cement #4 Plug			
0115	Ø		2	264	2	CMT	15.6	Displace with mud			
2200								Pump 10 sk cement #5 Plug			
								Shutdown Job completed			
							</				

REMARKS

SYSTEM CODE	NO. OF SACKS	YIELD CU. FT/SK	COMPOSITION OF CEMENTING SYSTEMS	SLURRY MIXED BBLs	DENSITY
1.	280	118	D917 High Early Cement	50	15.6
2.					
3.					
4.					
5.					
6.					

BREAKDOWN FLUID: TYPE		VOLUME		DENSITY		PRESSURE		MAX:		MIN:	
<input type="checkbox"/> HESITATION SQ.		<input type="checkbox"/> RUNNING SQ.		CIRCULATION LOST		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		CEMENT CIRCULATED TO SURF		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
BREAKDOWN		PSI	FINAL	PSI	DISPLACEMENT VOL.	Bbls		TYPE OF WELL		<input type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> STORAGE <input type="checkbox"/> INJECTION <input type="checkbox"/> BRINE WATER <input type="checkbox"/> WILDCAT	
WASHED THRU PERFS <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		TO	FT	MEASURED DISPLACEMENT	<input checked="" type="checkbox"/>	<input type="checkbox"/> WIRELINE					
PERFORATIONS:		TO		TO		CUSTOMER REPRESENTATIVE		DOWELL SUPERVISOR			
						RALPH		5/10/75		CARL	

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE

(See other in-
structions on
reverse side)Form approved.
Budget Bureau No. 42-R355.5.

12

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL:		OIL WELL <input type="checkbox"/>	GAS WELL <input type="checkbox"/>	DRY <input checked="" type="checkbox"/>	Other _____		
b. TYPE OF COMPLETION:		NEW WELL <input type="checkbox"/>	WORK OVER <input type="checkbox"/>	DEEP-EN <input type="checkbox"/>	PLUG BACK <input type="checkbox"/>	DIFF. RESVR. <input type="checkbox"/>	Other <u>P&A'd</u>
2. NAME OF OPERATOR Wintershall Oil and Gas Corporation							
3. ADDRESS OF OPERATOR 5675 DTC Blvd., Ste. 200, Englewood, CO 80111							
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface <u>1940' FSL & 1100' FWL (NWSW)</u> At top prod. interval reported below <u>Same</u> At total depth <u>Same</u>							
14. PERMIT NO. <u>43-037-31175</u>				DATE ISSUED <u>7/22/85</u>			
15. DATE SPUDDED <u>7/26/85</u>		16. DATE T.D. REACHED <u>8/14/85</u>		17. DATE COMPL. (Ready to prod.) <u>P&A'd 8/17/85</u>		18. ELEVATIONS (DF, R&B, RT, GR, ETC.)* <u>5457'GR; 5471' KB</u>	
19. ELEV. CASINGHEAD ---		20. TOTAL DEPTH, MD & TVD <u>5854'</u>		21. PLUG, BACK T.D., MD & TVD ---		22. IF MULTIPLE COMPL., HOW MANY* <u>None</u>	
23. INTERVALS DRILLED BY ---		24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* <u>NONE</u>		25. WAS DIRECTIONAL SURVEY MADE <u>No</u>		26. TYPE ELECTRIC AND OTHER LOGS RUN <u>DC/Neutron; BHC-Sonic; DIL/SFL</u>	
27. WAS WELL CORED <u>Yes</u>		28. CASING RECORD (Report all strings set in well)		29. LINER RECORD			
30. TUBING RECORD		31. PERFORATION RECORD (Interval, size and number) <u>NONE</u>		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
33. PRODUCTION		34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)		35. LIST OF ATTACHMENTS			
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records		37. SIGNED <u>Wintershall</u> TITLE <u>Operations Manager</u> DATE <u>9/16/85</u>		38. cc: UTAH OGMD			

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:				38. GEOLOGIC MARKERS		
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES						
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
DST #1, 5521-5611', Upper Ismay				Morrison	Surface	
DST #2, 5756-5785', Desert Creek				Entrada	650'	
DST #3, 5769-5787', Desert Creek				Carmel	750'	
Core #1, 5551-5611', Upper Ismay, recd 58'.				Navajo	830'	
(Full descriptions of above sent directly by service companies.)				Chinle	1540'	
				DeChelley	2350'	
				Cutler	2450'	
				Hermosa	4760'	
				Ismay	5474'	
				Desert Creek	5708'	
				Akah	5824'	